

The MILLING WORLD

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A NEW FRICTION CLUTCH.

MECHANICAL ingenuity has been at work for a long time in attempting to perfect the friction clutch, it being long ago conceded that a perfect friction clutch would prove an important adjunct to devices for the transmission of power. Some of the many advantages accruing from its use may be mentioned as follows: As a coupling it may be used to connect one portion of a shaft with another where it is desirable to stop one part while the other continues to move. As a clutch, in connection with pulleys, gearing, or sprocket wheels, it may connect counter-shafts with main lines, individual machines with the main line, or one part of a machine with another. It is particularly desirable in place of tight and loose pulleys, as the machinery may be started as quickly or as gradually as may be wished, without straining or fraying the belt, as is the case when a shifting belt is employed. In case of an accident, as of a person being caught in the machinery, a shaft being twisted, or a belt caught, the foreman in charge of the room or department would have the power under his immediate control, and could act immediately, and thus prevent what might occur during the delay of communicating with the engineer.

A clutch, to be a good one, should be, first of all, simple; second, it should be constructed so that the wearing parts may be well lubricated, and, at the same time, the oiled parts protected from the dust.

The essential features in this clutch, are two hubs, one of which is provided with an annular metal ring, operated by the proper mechanism and adapted to clasp a corresponding wood-filled hub which is attached to the sprocket wheel, pulley, gear or shaft to be driven. The clasp and unclasp of this metal ring affords the proper means of starting as required. The driving being effected by the friction between the ring and the wood-filled hub.

The clutch here illustrated can be described as follows: It operates on the same principle of clasp and unclasp of a metal ring about a wood-filled hub. The mechanical device for accomplishing this end may be understood from the cuts of cross and longitudinal sections.

A is the shaft; B is the wood-filled hub; C is the annular metal ring; D the case or hollow hub which is keyed to the shaft; G G are levers adapted to oscillate on the points of the adjustable screws H H; J is another lever, the wedge-shaped end of which can be seen in the cross-section; O is a toggle, and M is a sliding sleeve or collar. The cut illustrates the clutch in grip; the grooved collar, M, is up to the case as far as it can go, and it will be noticed in this position the toggle is past the center, and consequently locked; the wedge end of the lever J is pushed down between the levers H H, which in turn clasps the ring firmly about the wood-filled hub B. It will be observed that three of the most

powerful elements in mechanics are employed in this clutch, namely: The toggle, the wedge, and the lever. Thus, a very small power on the hand lever will put into force the most powerful clutch, and that without any end thrust on the shaft, the great objection to the majority of friction clutches. It may be also mentioned that the frictional parts are entirely encased, so that no dust or dirt of any kind can reach them, and, by a judicious arrangement of the oil chambers and channels, the oiling of the surfaces is most perfectly secured.

One of the cuts represents the clutch in combination with the hub of a pulley, there being a special wood-filled hub made for this use. This combination will take the place of a tight and loose pulley. The clutch gear illustrated is particularly desirable, as it allows the throwing in of gears without fear of breaking the teeth. In many instances a clutch would pay for itself in this combination. The clutch

Chicago, Ill., and from them the interested reader may obtain all further desired information.

THE WINDMILL TRIALS AT THE AGRICULTURAL EXHIBITION, PHILADELPHIA.

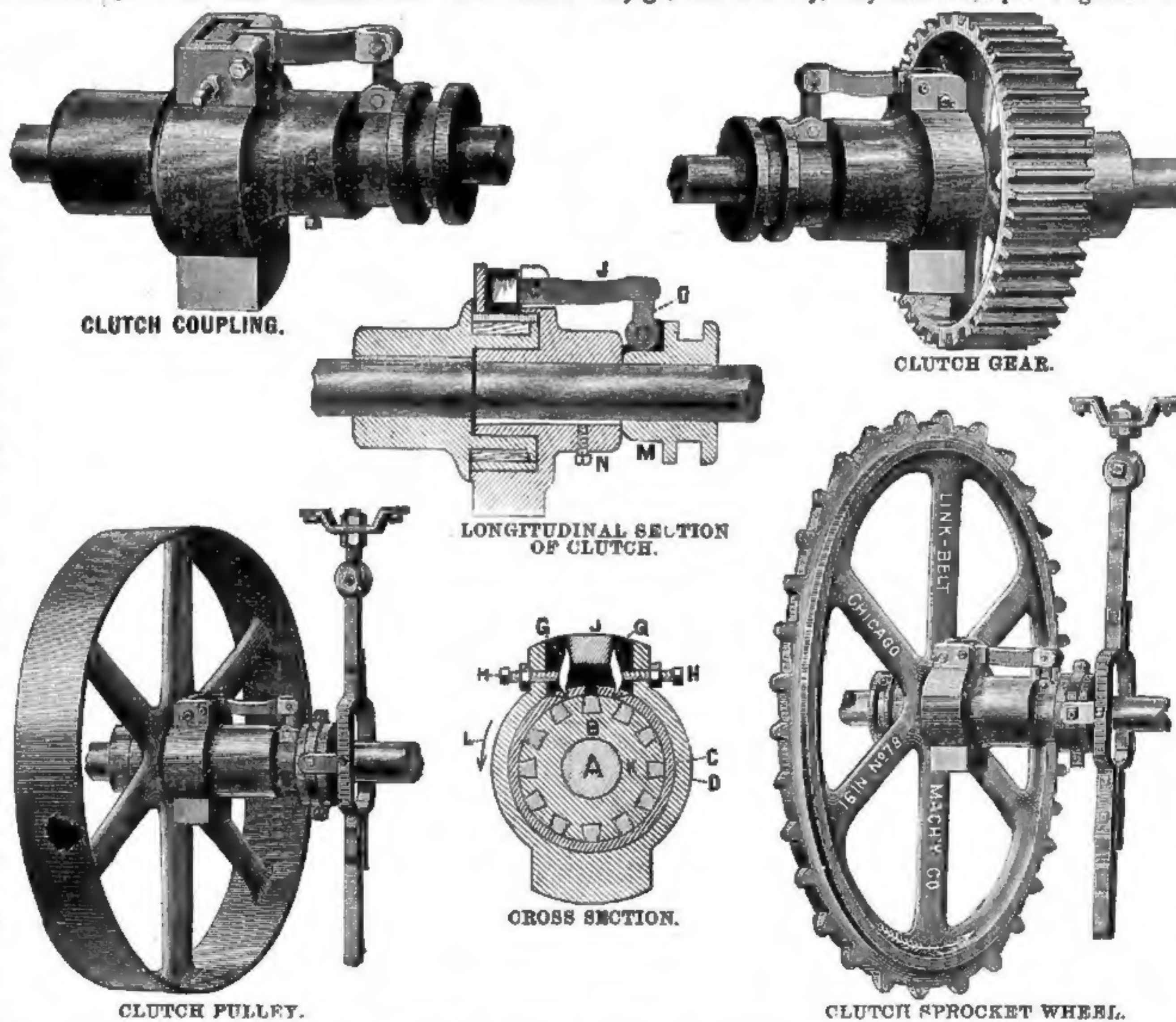
THIS year, says the "American Engineer," furnishes an opportunity of studying the methods of improperly conducted "scientific" tests at exhibitions. One of the most notable examples of "how not to do it," is to be gleaned from competitive trials of windmills at the agricultural exhibition recently held at Philadelphia.

The knowledge extant as to the performance of American windmills is summed up in the collated results contained in practice by a few of the more prominent manufacturers. The average pumping capacities of various sized windmills which these manufacturers publish, give satisfaction as far as they go, that is to say, they enable the pur-

adequately answer the problem to be solved. When, therefore, the Pennsylvania State Agricultural Society proposed to make comparative trials of windmills at their autumnal exhibition in Philadelphia, the idea was one that met the cordial sympathy of those interested in the theory, construction and use of windmills as prime movers. We, among the number, were ready to find prominent and extended space in our editorial columns for the lengthy, unsigned circular issued by some unknown "committee on trial of windmills." In our issue of July 4th, when presenting this circular, we took occasion to point out some serious defects in the same, and the method of tests proposed. We objected, for instance, that the names of the board of experts were not given. But this omission has now been amply accounted for by the fact that the judges appointed are not men who have either special experience in windmill design or construction, or recognized ability in the making of accurate

scientific experiments. If the latter had been the case, we would not have been called upon to criticise such inexcusable blunders as the velocity and pressure of the wind at the distant signal service station being considered as necessarily the same as the velocity and pressure with which the wind impinged upon the respective windmills, nor would the water pumped have been measured otherwise than by direct volume or weight, and not by metre. Nor would such small windmills as 10 feet diameter of wheel have been submitted to test in ignorance of the fact that, in such small mills, the loss of power, due to the surface of the wheel being cut away and the power lost by friction, represents so large a percentage of the total theoretical effect. To truthfully determine the comparative efficiency of various types of windmills and to secure data of use in the theoretical analysis of the impulse of wind on windmill blades, the windmills experimented upon should have had diameter not less than 20ft.

All this was pointed out and brought to the attention of the managers of the Agricultural Exhibition. Not only this, but one of the exhibitors, really and intelligently interested in a fair and accurate trial, reiterated the same and other objections to the trials in an official letter to the managers. Notwithstanding, the windmill tests were made in the unsatisfactory, desultory and unscientific manner described in the original circular. What can be the outcome of such a test? Whichever windmill shows the greatest capacity, the manufacturers of the other windmills can justly set up the claim of inaccuracy of experiment, that the velocity with which the wind struck their mills was less than that with which the wind impinged upon the successful machine, and can name many other objections, not to mention the charge of lack of special ability on the part of the judges. From a scientific stand-point, the trials are still



CLUTCH PULLEY.

sprocket wheel, also illustrated, is another combination which, for throwing in a positive belt, seems to leave little to be desired.

The adjustment of the clutch is effected by the set screws H, shown in cross section. If set screws are turned inward the ring will clasp tighter. Should the clutch slip, screw in the set screws only enough to make it hold, for if too tight, an unnecessary strain is put upon the working parts. If properly adjusted, the spool M will remain in contact with hub N, Fig. 2, when the clutch is engaged, and as this position throws the toggle O a little over the centre, it forms a self-lock, and there is no danger of the clutch becoming relaxed. The clutch should be continually kept well oiled, as it is designed to run in oil, and particular attention should be paid to this fact when the clutch is new until it gets settled to its work. This clutch is one of the specialties of The Link Belt Machinery Company., of

chaser to determine with tolerable safety which sized windmill will answer his special demand. On the other hand the data are scarcely accurate enough to serve as a basis of comparison between various types, and far less do they serve as a test of the several "theories" relating to the impulse of wind on windmill blades, while such "theories" are by no means few in number.

The only experiments undertaken to accurately settle this question and other important problems in windmill construction, date back respectively to the time of Smeaton in the latter half of the last century, and to Coulomb in the first part of this century. Both of these famous engineers experimented with European or Dutch windmills, which are now being quite rapidly replaced by the American type of windmill; and the experiments themselves, owing in part to lack of facilities and to the lack of the existence of instruments of precision, did not

more valueless; for how can conflicting "theories" be tested by experimental results, themselves open to question and to the charge of inaccuracy.

The windmill test at the Pennsylvania Agricultural Exhibition was nothing short of a farce. We can not undertake to detail all the absurdities attempted, but we can enter a decided protest against this class of protest. It serves no purpose, save to bring ridicule on the subject of testing in general. All those who really believe with us in the value of accurate, scientific trials, should join us, and individually protest against such slipshod and untutored tests as seem to be the growing fashion at the various exhibitions. The time has come for engineers of standing to refuse to take part in other than strictly accurate trials, trials which they personally direct and conduct with refined and standard apparatus, devised or recommended by them, and secured or used at the expense of the exhibition.

SILVER CREEK, N. Y., AND SOME OF ITS INDUSTRIES.

The little village of Silver Creek, in this state, is pretty well known, by name, to the millers of the world, and, in a mild way, the inhabitants of that village take considerable pride in its reputation. Occasionally some citizen is struck with the idea that outside barbarians should have a little insight into its sources of prosperity and proceeds therefore to write up the town and business men thereof, a proceeding, by the way, which is very commendable, and one that some other villages and towns might adopt with advantage. The latest effort in this direction is a little pamphlet edited by G. L. Heaton and entitled "A Review of the Leading Business Houses, and Early History of the Mercantile Trade in the Village of Silver Creek, Chautauqua Co., N. Y." The title is somewhat formidable, but with that we have nothing to do. We find in it something regarding the foundation, growth and present condition of three well-known firms, and make extracts therefrom, as of interest to many of our readers. Concerning the establishment of

HOWES & EWELL

the editor says: A full complete history of this extensive establishment dates back for nearly thirty years. In the spring of 1854 Mr. Simeon Howes and G. E. Throop, of Wyoming County, this State, were engaged in selling a combined smut and separating machine, and the right to manufacture the same for Messrs. Rutter & Rouzer, of Ohio. About that time they sold the right to manufacture and sell this machine to Messrs. Ezekiel Montgomery & Sons, in some fifteen counties in this state; also to Alpheus Babcock the right of some nine counties in Western Pennsylvania. Both parties commenced manufacturing the machines, but soon discovered there were serious imperfections in them, and both endeavored to make improvements. In the spring of 1858 Mr. Howes moved his family to Silver Creek, entered into co-partnership with the Messrs. Montgomery, and engaged in the manufacture and improvement of the machine. During that year there were some forty of these machines manufactured and sold. In 1857, Mr. Howes sold his entire interest in the patents, machines and good-will of the business to his partners, the Messrs. Montgomery, who continued to manufacture and improve the machines. Mr. Howes agreed not to engage in the manufacture and sale of a combined smut and separating machine again for six years. During the war Mr. Howes had charge of an extensive sutlery business for Messrs. Smith & Lockwood, and spent most of the time for three years at the front in North Carolina. In September, 1864, he resigned that position and came home to Silver Creek.

The time having expired for which he agreed to refrain from the manufacture of combined smut and separating machines, on the 1st of January, 1865, he formed a co-partnership with Mr. Alpheus Babcock and his brother Norman, under the firm name of Howes, Babcock & Co. The Messrs. Babcock had been manufacturing a smut and separating machine to a limited extent, similar to the one manufactured by the Messrs. Montgomery, and on which they claimed there was some slight infringement. Finally, to avoid difficulty or trouble, the firm of Howes, Babcock & Co. proposed to purchase all the right, title, patents, good-will and plant of the Montgomery smut and separating machine works. The Montgomerys set their price at \$20,000.

The firm of Howes, Babcock & Co., arranged with Mr. Albert Horton to take an interest with them, and on the first day of January, 1866, they took possession of the Montgomery shops, and became sole owners and proprietors of the Eureka smut and separating works, with all their patents and improvements, tools and all things pertaining to the business. The firm soon discovered that the shops, tools, stock of material, in fact everything about the establishment, was inadequate to do the business or build the number of machines desired in a given period. They were compelled to immediately enlarge their works, order new tools, and increase their stock of material. This required the expenditure of a large amount of capital. Mr. Horton, although a practical man in many respects, had no conception of the extent and requirements of a large manufacturing business (he having been a farmer all his life previous to that time), soon became alarmed at the amount of money it required to carry on, expressed a desire to sell out, and withdraw from the business. In April, 1866, he found a purchaser in the person of Mr. Carlos Ewell, of Wyoming County, the firm name remaining the same—Howes, Babcock & Co. Soon the orders come pouring in upon them so that they manufactured and sold 400 machines the first year; the second year they manufactured and sold some 700 machines; and from that time until the present they have gradually increased the number of Eureka smut and separating machines, as well as the several other kinds of wheat-cleaning machinery they manufacture, until now the number reaches about 1,200 annually.

Not long after their commencement the milling industry of the world demanded additional machinery for cleaning wheat. It was found that no one machine, or a combined machine, could be made to clean wheat perfectly or satisfactorily. They have continued improving and adding new machines until they are now manufacturing, in addition to the Eureka smut and separating machine, the Eureka brush finishing machine; the Eureka zig-zag milling separator; the Eureka zig-zag warehouse separator; the Eureka zig-zag elevator separator; the Eureka receiving separator; the Eureka screening separator; the Eureka automatic magnetic separator; the Silver Creek flour packer. Some of the above machines have been added to the list within the last few years, but all have been in use a sufficient length of time to demonstrate the fact that there is no other single machine, or a line of machines, manufactured in the world that will clean wheat more perfectly—if as well—as the Eureka machines manufactured by Howes & Ewell, Silver Creek, N. Y. This is also clearly shown for the reason that there is to day no place in the known world where wheat is grown and flour ground that the Eureka wheat-cleaning machine is not used, and we believe, gives universal satisfaction. The shipment of machines to Europe, including all parts of the continent, to those parts of Africa and Asia where wheat is

grown, and to Australia, is rapidly increasing.

Some few years after purchasing the plant from the Messrs. Montgomery, they were compelled to erect new shops and put in new machinery, which more than doubled their capacity. Again, in the summer of 1882, they were compelled to make another addition of buildings and machinery, which increased their capacity one-third more, and now gives them, with one exception, the largest and finest line of brick shops in the county. There are but few establishments in the county that have a larger weekly payroll than the Eureka, which amounts to about \$1,200 each week for the men employed in the shops. In addition to this, they have several agents constantly traveling in this country, whose expenses is no small item. Also several clerks who are well and handsomely paid.

They do not use any lumber for the construction of machines until it has been previously piled properly in their yard for two years, so that they know it is thoroughly seasoned. This necessitates their carrying an immense stock of lumber on hand constantly. Both pig and wrought iron is bought by half a dozen carloads at a time. Taking all this into consideration, it will be seen that it requires a large amount of money to conduct a business of so great a magnitude. In addition to their manufacturing business, they are probably among the most extensive dealers in bolting cloth in the United States, at the head of which stands the celebrated Dufour cloth, said to be the best and most perfect cloth manufactured. They also have the celebrated Dutch anchor cloth, which is believed to be next to Dufour in quality. All parties buying bolting cloth of Messrs. Howes & Ewell can feel assured of one fact—that is, they will get just what they order, and no other. Mr. Alpheus Babcock remained a member of the firm until his death, which occurred in December, 1878. Norman Babcock continued with the firm until July 1st, 1883, when he disposed of all his interest and good-will in the business and plant to his partners, Simeon Howes and Carlos Ewell. Since that time (July 1, 1883), the business has been managed and conducted under the firm name of Howes & Ewell. It is unnecessary for us to state that it requires only a few such establishments to build up a village and give it life and animation. The circulation of the large amount of money paid to the workmen by this and other manufacturing establishments of this village is an item of no small importance. It would be a sad and sorrowful day for this village should anything occur to cause the stoppage of our manufactures.

G. S. CRANSON & SON

are touched up in this fashion: The milling machinery and wheat-cleaning machinery that is manufactured at Silver Creek has done more to bring the place into note and give it a high standing as a manufacturing village than anything else. Among our leading and prominent manufacturers are G. S. Cranson & Son, who are the inventors and manufacturers of what is known as Cranson's Silver Creek Buckwheat Shucker, a machine that has entirely revolutionized the grinding of buckwheat and manufacturing it into flour. The change has been so great that now there is scarcely any similarity of the article made by the new process to that made by the old. Farmers who have grown buckwheat, and millers who have ground it, know that in harvesting it, it is almost impossible to do so without having more or less particles of earth mixed in with it, which is very difficult to get the grain free of, even when it has been cleaned half a dozen times over by the old process. When ground into flour, this is mixed in with it, as is also a large amount of dust that naturally adheres to the berry.

By the old process, also, a large amount of the dark, black shuck that covers the kernel is ground up, so that "earth," "dust" and "shucks," all ground together with the grain, give the flour a dark, dingy, gray appearance; and those who are fond of buckwheat cakes sometimes painfully realize the fact that they are taking small quantities of mother earth into their stomachs. The inventions of the Messrs. Cranson relieve the grain of all these impurities by first passing it through a scourer with a large rotary fan attached, which blows the dust away as fast as it is scoured from the grain, so that when it comes from the scourer the kernels are as bright, smooth and clean as the handsomest flaxseed. The next process is to put the grain through the shucker. Here the kernels all pass between two grooved iron rollers, which crack the hard, black shuck and separate it from the meat of the berry. There is also a rotary fan attached to the shucker, which blows away the black hull, or what is sometimes called buckwheat bran. This leaves the meat of the grain clean and free from any impurities, and when ground into flour it is as white and handsome as many grades of wheat flour; in fact, it is much handsomer and whiter than three-fourths of the wheat flour made thirty years ago. It will be seen that this process relieves the grain of all impurities and uncleanness, and it has also been discovered that it takes away all that part of the grain that causes buckwheat to be unhealthy to some people. We would say to all farmers who grow buckwheat for their own consumption, or to have it manufactured into flour for sale, be sure and take it to a mill that has a Cranson's Silver Creek Roller Buckwheat Shucker, and no other. Better go 25 miles to such a mill rather than have it ground by the old process. You not only get cleaner and better flour, but you get much more of it from the same quantity of grain. We would also say to all who purchase buckwheat flour, be sure you get that manufactured by the Cranson process. It is cleaner, purer and healthier. Then you have a luxury. About

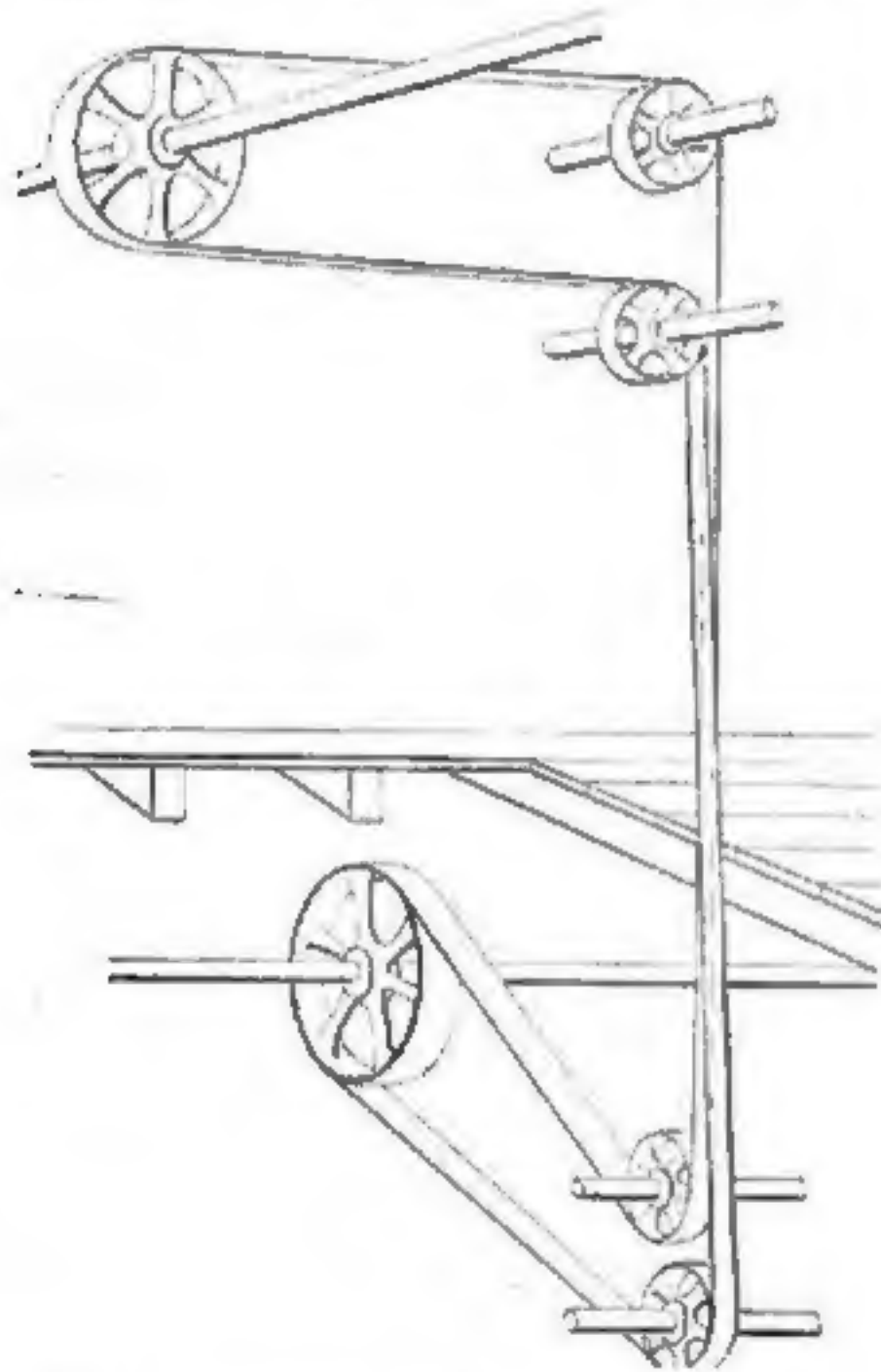
AUGUST HEINE.

the pamphlet has this to say: Among our leading manufacturers is Mr. August Heine, who commenced here a few years since, in quite a small, unpretentious way. A dozen years or so ago he became interested—with Mr. W. W. Huntley and A. P. Holcomb, under the firm name of Huntley, Holcomb & Heine—in the manufacture of flour milling machinery. Within the last three years Mr. Heine has purchased the interest of both his partners in the plant, patents and good-will of the business, so that he is now the sole owner and manager of the Excelsior Manufacturing Works of this village. He has constantly on his pay roll from 100 to 125 men. It is these men, and those employed by other manufacturers, with the money they receive from their employers as wages, that keeps our village in its flourishing condition. Should anything occur to stop these manufactures, our village would feel it sudden enough. Mr. Heine is now manufacturing: The Silver Creek centrifugal reel, the Silver Creek double scalper, the upright Excelsior iron-clad bran duster, the horizontal Excelsior iron-clad bran duster, all of which are being used to a great extent all over the civilized world, wherever flour is manufactured from wheat. It is but about three years since the Silver Creek centrifugal reel was first introduced to the public. The success with which it is meeting is truly wonderful. There are already hundreds of them in use, and the manufacturer is hardly able to keep up with the orders. That it is a machine giving the very best satisfaction is assured from the fact that many mills, who only ordered one or two to give them a trial, have since ordered several, so that it is not an unusual

circumstance to find as high as five or six Silver Creek centrifugal reels in one mill. They are also very rapidly being introduced into mills in the old country, and, in fact, all over the world, wherever flour is made. The other machines manufactured by Mr. Heine are giving equally as good satisfaction, and coming into general use. There is scarcely a week but Mr. Heine makes a shipment of his machines to Europe or other foreign countries. These machines and the wheat-cleaning machinery manufactured here has given our village a favorable reputation, and Silver Creek, N. Y., has become about as familiarly known in Europe, parts of Africa, and Australia as is New York City; and to the energy, enterprise and perseverance of Mr. August Heine is due a large portion of it. Mr. Heine is also conducting the banking business, which is a great accommodation not only to the business community of this village, but to all the surrounding country.

TRANSMISSION OF POWER BY GUIDE PULLEYS.

Since the introduction of steam power for the purpose of keeping machinery in motion during the dry season, or whenever the water privilege fails to supply the demand from the turbines to keep the shafting anywhere near their regulated speed, the transmission of power by means of belting has been called upon not only for the purpose of driving one pulley from another that may be on a different level and perhaps in an adjoining department, but to be able to work



from either source, as the wheel that may be driven at one time may at another be taken for the driver by the uncoupling of the shaft in the wheel room, and connecting with the engine in some other part of the establishment. Whenever an additional building has been constructed, or a wing in which a shaft is to be connected, the carrier pulleys are applied which enables the machinery to be driven from the line shafts in the basement regardless of the position of the one with which it is to be connected. The outline drawing herewith is to illustrate the method that has been adopted to assist in driving a shaft that is lacking in speed where a separate water wheel is intended to supply this department with power. We reproduce the engraving from the Boston Journal of Commerce, which says: The belt is to make two right-angle turns before it reaches the driven shaft, and requires at least four carrier pulleys to guide and conduct from one pulley to the other. These carrier pulleys, when of sufficient diameter and arranged on counter shafts operate with little trouble, provided they have been properly adjusted, but they are often found very small in diameter as compared with the wheels they are to assist in driving, and perhaps working similar to that of a loose pulley, with only the leading side anywhere near in line with the adjoining wheel,

that brings the strain of the belt all to one side of the wheel with a bad effect on the working of the pulleys without improving the full width of the belt. The wheels from which the power is to be taken may be as shown in the drawing down in the basement of the building, and perhaps the belt is to be conducted through a belt-hole cut in the stone work by a pair of carrier pulleys beneath the floor in the adjoining building. The belt may then pass through the room above in a narrow belt box where one of the folds is to be close to the other, and then to be taken over the guide pulleys in the loft to the shaft by which the machinery in this department is to be driven. Although the carrier wheels have been carefully lined and leveled, no sooner is the belt carried through the rooms and over the wheels and laced together than it will be seen there must be a change in some of the positions of the pulleys to allow the belt to follow in the center of the face of the wheel; and if we were to examine the working condition of one of these wheels that is badly out of line on the retiring side, we may find an open space of nearly one-half the width of the belt that extends through a greater portion of the arc of contact. When the workman attempts to adjust one of these wheels by driving over the hanger, or letting-down boxes, he will very soon learn that there is only one direction in which he can change the position of the pulleys without disturbing the guiding influence on the belt, or the leading effect for the adjoining wheel. If either one of the open spaces from an idle wheel is in line with its plane of rotation, the other can be brought into position by moving the position of the wheel about the central line of the belt that is properly adjusted for an axis till the remaining span has been brought into the central plane. This is accomplished on the cut-and-try plan, or the knock-and-pound style, by first changing the position of the wheel by moving the hangers and adjusting the boxes till the belt runs even with both edges of the wheel, and then to carry the pulley bodily about the central point where the belt first comes in contact with the wheel till the strain on the leaving side draws evenly on the full width of the belt. When a pulley is right, however, the central plans of rotation will pass through the points where the central line of the belt first comes in contact with the adjoining wheels, or the extremities of the two spans with which every pulley is connected; in other words, the axis of a belt should be considered as lying in the intersection of the central plane of rotation from one pulley to another, however, great the number of pulleys may be, and when these planes are allowed to intersect so that the intersecting line shall be brought tangent to the circle that includes the diameter of the pulleys, and one half of the thickness of the belt, we may expect the pulleys to work properly and the belt to remain in its place regardless of the direction in which it is to drive.

FARMERS SELLING: SPECULATORS HOLDING WHEAT.

Figures show that, contrary to expectations, farmers, either under pressure of hard times, or because they see no immediate prospect of an advance in prices, have been marketing their wheat very freely in spite of the low prices they obtain for it. The interior points, called "primary markets," for which grain receipts have been collated, are St. Louis, Peoria, Chicago, Milwaukee, Detroit, Duluth, Toledo and Cleveland. Minneapolis and St. Paul are omitted, because most of the wheat received at those points is made into flour instead of being re-shipped. The receipts of wheat at these eight markets for the nine weeks ending with the last Saturday in September, were 29,002,506 bushels in 1884; 23,453,041

bushels in 1883; 24,814,991 bushels in 1882; 14,634,051 bushels in 1881; 23,056,253 bushels in 1880, and 30,754,392 bushels in 1879, so that not since '79 has so large a quantity of wheat found its way so early in the season, to these interior markets, as this year. The contrast may be still more strongly shown by calling attention to the fact that our present crop of "about 500,000,000 bushels" is about equal to that of 1882; yet our farmers have sent 15 per cent. more wheat to market in the nine weeks following July 28, 1884, than in the corresponding period two years ago, although in the latter case wheat sold at Chicago for \$1.05 per bushel, while in the former it brought only 81 cents.

But although a larger amount of wheat than usual has left the hands of farmers, a smaller amount than usual, taking the average of years, has reached the seaboard. The movement of grain east from the above eight markets, has been only 72 per cent. of the receipts in 1884, against 80 per cent. in 1883, and 81 per cent. in 1882, so that wheat must be accumulating in the hands of buyers and speculators in the interior. For ourselves, if able to afford to do so, we would prefer to hold back our wheat rather than sell it at a loss; but we willingly confess that it might be a wiser policy to accommodate ourselves to the era of prevailing low prices, and put up with a small known loss, rather than risk a large unknown one.—Rural New Yorker.

CAN YOU SUPPLY HIM?

Editor Milling World:

I would like to know where I can get the lowest quotations on bran and shiptuff delivered on Valentine's Switch, at Woodsboro, Md., in car lots. You will please send me the address of some such parties or send my address to them and oblige.

W. J. VALENTINE,
(Frederick Co.) Woodsboro, Md.



HOW DOES THIS SUIT?

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"Messrs. Kreider, Campbell & Co.,
"Philadelphia, Pa.
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We think best not to publish name, but it will be given upon application. Address, KREIDER, CAMPBELL & CO. Philadelphia, Pa.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,
Columbus, Ohio.
Office and Factory, 5th Street, north of Naughten.

BUCKWHEAT FLOUR

Always commands a better price, and gives better satisfaction to the consumer when made by the aid of Cransons' Silver Creek Roller Buckwheat Shucker. This is a fact which we can demonstrate to any miller who will write us.

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Silver Creek, N. Y.

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One 16-inch under-runner, full iron frame, middlings mill, made by C. C. Phillips, Philadelphia. It is brand new, has never been used, and will be sold at a big bargain as I have now no use for it. Address C. P. I, care THE MILLING WORLD, Buffalo, N. Y. 17

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Three McCully Corn Cob Crushers. The above articles are brand new, in perfect condition, just as they left the factories, and will be sold very cheap for cash. Address S. 30, care THE MILLING WORLD, Buffalo, N. Y. 17

FOR SALE.

A fifty-barrel steam flour mill, 8 run of burrs and five sets rolls, with other necessary machinery; all nearly new, and doing good work. An upright Payne 50-horse power engine. Price, \$10,000; terms easy. J. H. DEARBORN, Silver Lake, Kan. 251

A GOOD CHANCE.

Valuable water power and buildings to rent in Lockport, N. Y. About 1 1/2 acres of land, on which are stone buildings, with slate roof; connected; three stories high; 151x85 feet on the ground, with 140-horse power Leffel turbine water wheel. Will be rented or sold on liberal terms. Apply to L. A. SPALDING, Lockport, N. Y. 263

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FOR SALE.

A four-run New Process water power flouring mill, and 160 acres of very choice land; 40 acres of young timber. Situated in Colfax county, Neb. Mill in good repair. A never-failing water power. All facilities for making first class flour. A good chance to do a first-class paying business. Owners desire to get into other business. This property will be sold at half its cost. Address, J. A. GRIMISON, Schuyler, Colfax county, Neb. 171

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SITUATION WANTED.

By a millstone dresser and practical flour miller, (English) or grain inspector. Address, GEORGE WELLS, 140 (new No.) Broadway, Rochester, N. Y. 2528

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OFFICES, LEWIS BLOCK, SWAN STREET,
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Card of Rates sent promptly on application. Orders for new advertisements should reach this office on Tuesday morning, to insure insertion in the week's issue. Changes for current advertisements should be sent so as to reach this office Saturdays.

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Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with any manufacturing or mill furnishing business. Its editorial opinions cannot and will not be influenced by a bestowal or refusal of patronage. It has nothing for sale, but its space to advertisers and itself to subscribers.

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ALMOST OVER.

ANOTHER week will decide the great and momentous (?) question which is agitating the breasts of patriotic citizens of the United States and we will know who is to be the next president. Trade papers, unless they advocate some one of the few especially protected industries are sublimely indifferent to the political convulsion, and wish the struggle ended principally on account of its depressing influence on the trade of the country. Everything is postponed until "after the election:" nobody cares to begin anything until "after the election," and the "election" is made the great veil to cover all possible and impossible sins of omission and of commission. The only thing that interests THE MILLING WORLD

is the disappearance of the last-mentioned apology for the present stagnation of commerce and industry. Business was dull in early summer, because the coming harvests were uncertain; it remained so during the later summer, because the harvests, although rich, were not yet safely under cover; it did not revive in early fall—because every country in the world reported an abundant and good crop; now it lingers on and vegetates only, on account of the uncertainty of affairs induced by the presidential election. At least so they say, and "they" of course know all about it. If this last mentioned factor can influence the business of America, it seems at least strange that England, for instance, should be similarly affected, where, we are told, the universal trade depression is so excessive that it threatens to drive all other questions into the background. England, as a free trade country, has advocates of protection to stimulate the depression; in America we find those who favor free trade as the remedy for the commercial stagnation, and thus opinions differ. As long as the issue of a presidential election is not between free trade and protection, as long as we find one party almost as much divided on this question as the other, trade will not be influenced by the election of the one or the other candidate, at least not beyond a mere local recognition induced by the excitement of the hour, and idiosyncracies of the individual. With the questions at issue now, the United States will remain the most prosperous country in the world, even in spite of the present presidential election, which handles the tariff question with the greatest care for fear of disturbing the watchful guardians of both free trade and protection and creating breaks in their own ranks. And we are glad to see the campaign drawing near to its end, and giving us the opportunity of finding a few items of interest in our daily and weekly exchanges, which now give about seven-eighths of their space to mud-slinging in the most approved style against the opposing political party.

PROFIT IN WHEAT GROWING.

"One of the 'bonanza' farmers of the Red River valley states that in a good year his farm averaged twenty bushels of wheat per acre, and that the cost of production was \$8.00," says a St. Paul correspondent to Bradstreet's. "In this average of 40c per bushel the lowest possible estimate is reached. The soil of these thousands of acres was prepared by gang-plows, laborers were hired for the season only, and housed and fed on a systematic plan; all farm supplies were purchased at wholesale prices, harvesting and threshing were done by steam, and there were no families to be supported during a long and severe winter. We may call this average of 40c the wholesale cost of production, and evidently the average lies somewhere between it and 60c, in which it is believed that the outside figures are named. Now, at no point between these limits is there a figure which will secure to the farmer anything beyond possible economical living expenses at the prevailing price of wheat. Assuming average conditions throughout, a comparison of the cost of production with the price of wheat delivered at the nearest railroad station makes it evident that the farmer who has not practiced the severest economy, or who is encumbered with interest charges for debts incurred will have hard work to hold his own." If farmers are able to hold their own with wheat exceptionally low, their profits when the prices were from 30 to 40c higher per bushel must indeed have been quite considerable as compared with the capital invested. There really seems to be no reason why farmers should claim an average higher percentage on money invested in farms than is realized in other

branches of industry, where, as is admitted on all sides, economy down to the closest possible margin is necessary in these dull times. A few more investigations into the actual cost of the production of wheat from different parts of the United States may finally settle this often repeated cry of "farmers selling their wheat at a price below the cost of production," and Bradstreet's correspondent has made a fair beginning in the opening of a new line of enquiry.

THE HUDSON'S BAY ROUTE.

The efforts of the Canadian Government to establish a short route for the shipment of grain to Europe by the way of Hudson's Bay have not met with much encouragement, by the reports of the expeditions sent out to investigate the matter in early summer. The point to decide was whether Hudson's Bay was navigable long enough during certain summer months to admit the loading of vessels before the Straits of Hudson were again closed by ice. The past summer's experience of the expedition is something like that of the advocates of a route to Siberia by way of the Arctic Ocean. Theoretically feasible, but practically possible only under exceptionally favorable conditions, and at what times such conditions occur will perhaps always be a matter of conjecture. Suffice it to say that the report of this past summer's observations with regard to the Hudson's Bay route is discouraging enough to exclude any possible competition along this short line with the established longer routes running more southerly across the Atlantic. August is always considered the month most favorable to the navigation of the Arctic seas, and the numbers of icebergs, ice floes, fogs, heavy gales and snow storms encountered by the expedition in that month was discouraging enough to the possibilities of the proposed new water route. Of course one summer's observations will not be accepted as evidence conclusive enough to reject the project entirely, because it may have been an exceptionally bad year for ice navigation; but it may also have been a good year or an average year, so that the chances are about even, at least for the present; and until the next summer brings additional news, confirming or rejecting those of this year, the new line of transit across the British dominions to Europe by the way of Hudson's Bay will be a question of theory only, and as such harmless to the established lines of commerce, even if the proposed route is several hundred miles shorter.

WONDERFUL inconsistencies do appear sometimes in the discussions of free trade and protection. Germany is at the present time perhaps the ideal of all protected countries to the orthodox protectionist, and everything that can be done in the line of protection is done ostensibly in the interest of the home industry. Well and good. We will not enter into a discussion of the immediate and future effects of such a policy but simply state the fact. Austria on the other hand, is also a country well protected by tariff, and both empires have been supposed to flourish, or at least to do the best they could, under these conditions. Now if we can believe the latest news, a consolidation of the two empires into a tariff union is to be established, for the benefit of both countries, and numerous advantages are expected to accrue to both from such a combination. If this means anything, it means free trade between Austria and Germany, the query is if such a combination of interest works beneficially to two countries, why or how would it be detrimental if a third was admitted into this union, or a fourth, or a fifth? If a rigid protective tariff policy is the best for a country, how is it that an expansion of that country, so to speak, by the addition of another empire can

so change the conditions, that what was detrimental before, i. e., a free trade and unhampered interchange of products, is deemed beneficial all of a sudden?

THE Supreme Court of Georgia has decided that dealing in futures is illegal. Justice Blandford says: "Faro, brag, and poker are tame, gentle, submissive, animals compared to this monster, future speculation, which is a ferocious beast allowed to stalk about in open mid-day, with gilded signs and flaming advertisements, to allure unhappy victims to its embrace of death and destruction." That sounds well, but whether the different exchanges of the country will allow their actions to be influenced by that decision is a different question. We certainly consider it a very premature undertaking to kill the "ferocious beast" by the aid of the law.

FIRE consumed the entire third story of the factory of the Case Mfg. Co., at Columbus, O., on the 23d inst., destroying a large quantity of manufactured stock. The loss is estimated at about \$8,000, which is fully covered by insurance. As a sample of business enterprise we may note the fact, that the company had a force of a hundred men at work removing the debris as soon as the heat permitted and while the ruins were yet smoking. Within forty-eight hours after the fire the works were again in full operation, and as almost all of the valuable patterns were saved, the company will experience but little difficulty in filling orders.

IN view of the rapid progress of telephoning the idea that we may at some near future date be able to "Hello" across the ocean and converse with our friends in Europe, does not seem absurd at all. A project to that effect is even now under serious consideration if the reports are true that experiments in sub-marine telephoning are to be made between Halifax, N. S. and Gloucester, Mass., a distance of 850 miles. If these prove successful, the difficulties to be overcome on longer distances cannot be considered insurmountable.

ELECTRICAL exhibitions are now in order on this side of the Atlantic, as they were two years ago in Europe, chasing each other in double-quick step. Hardly had the Philadelphia exhibition closed on October 11, when we were told that the next of that kind will open in Boston on November 5 and continue until January 5. As this Boston exhibition was already advertised before the Philadelphia exhibition opened, it will be time now to look for Boston's successor to keep the ball rolling.

COLORADO is as a rule not looked upon as an agricultural state, but its possibilities in this line cannot be ignored entirely. A careful estimate places the lands available for agriculture with a system of irrigation at 6,000,000 acres, an area certainly sufficient to provide for a larger number of inhabitants than Colorado is apt to have during the next generation.

SOME of the new winter wheat patents exhibited at the exchange, says the New York Produce Exchange Reporter, indicate a great advance in the art of milling. With more age they show a decided improvement in color, and we feel like exulting over our great success in producing an article so near perfection.

GAS, we are told, sells in London at 66 cents per 1,000 feet. No wonder that the electric light companies cannot compare their business in England with that of America. Or are the London gas companies imitating the long list of manufacturers and producers, who constantly sell at a "loss?"

ESTABLISHED 1856.

EUREKA GRAIN CLEANING MACHINERY | GENUINE DUFOUR BOLTING CLOTH**OVER 18,000 MACHINES IN USE.**

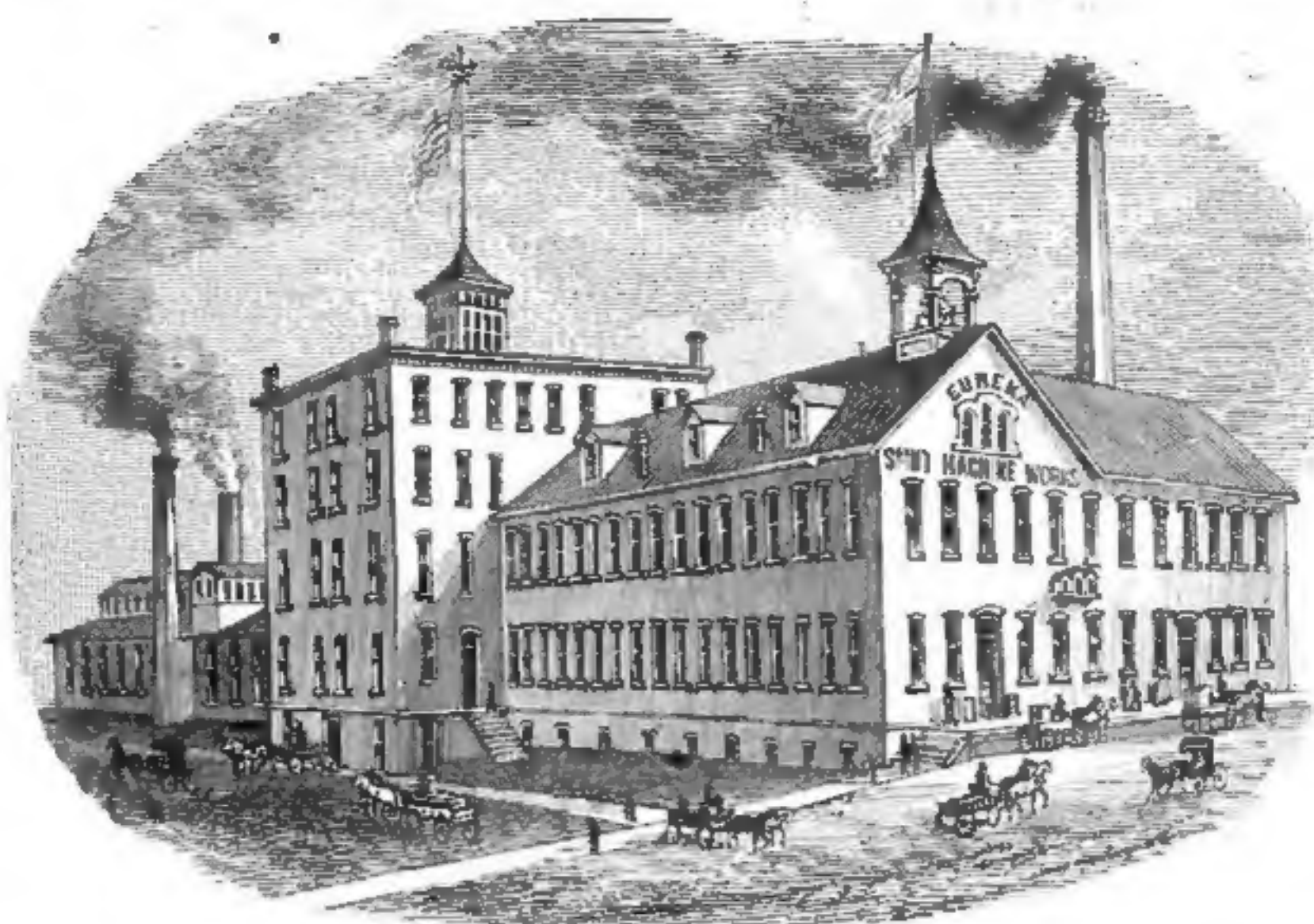
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Eureka Brush Finisher,
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Our establishment is the oldest, the largest and most perfectly equipped of its class in the world, and our machinery is known and used in every country where wheat is made into flour.

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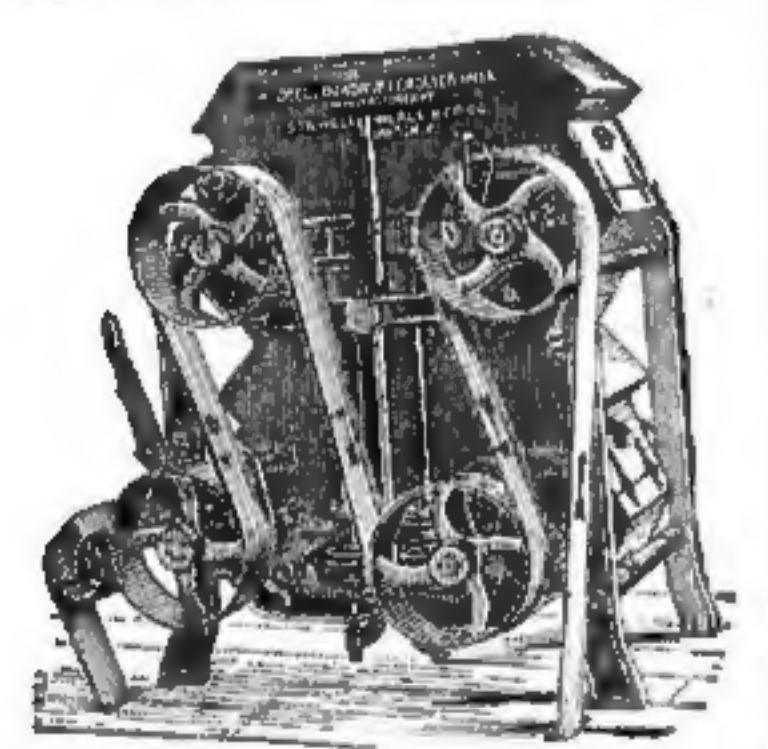
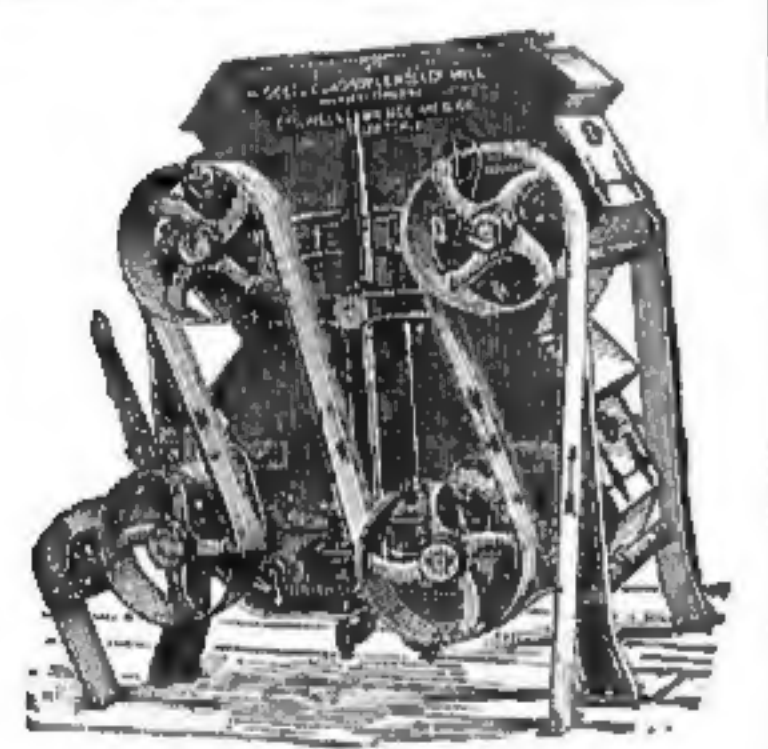
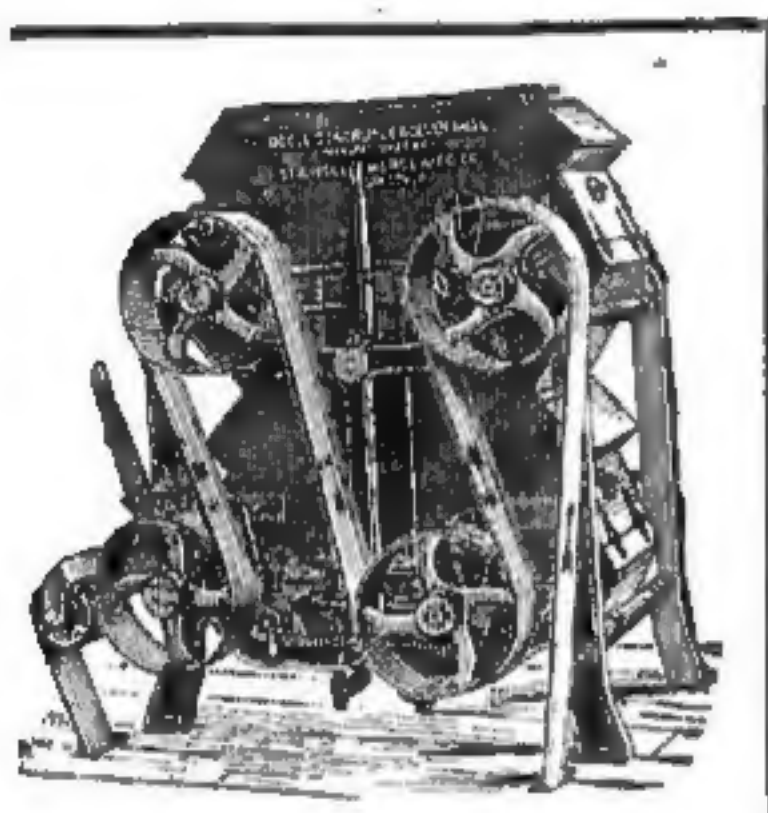
We handle this justly celebrated cloth in large quantities, and can fill all orders upon receipt. For such as may prefer a cheaper grade, we offer our

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Guaranteeing it to be equal in every particular to any other cloth on the market, except the Dufour. We have handled it for years, have sold thousands of yards of it, and know it will fully sustain our representations.

Send For Samples of Cloth, Our Style of Making Up, and Prices.

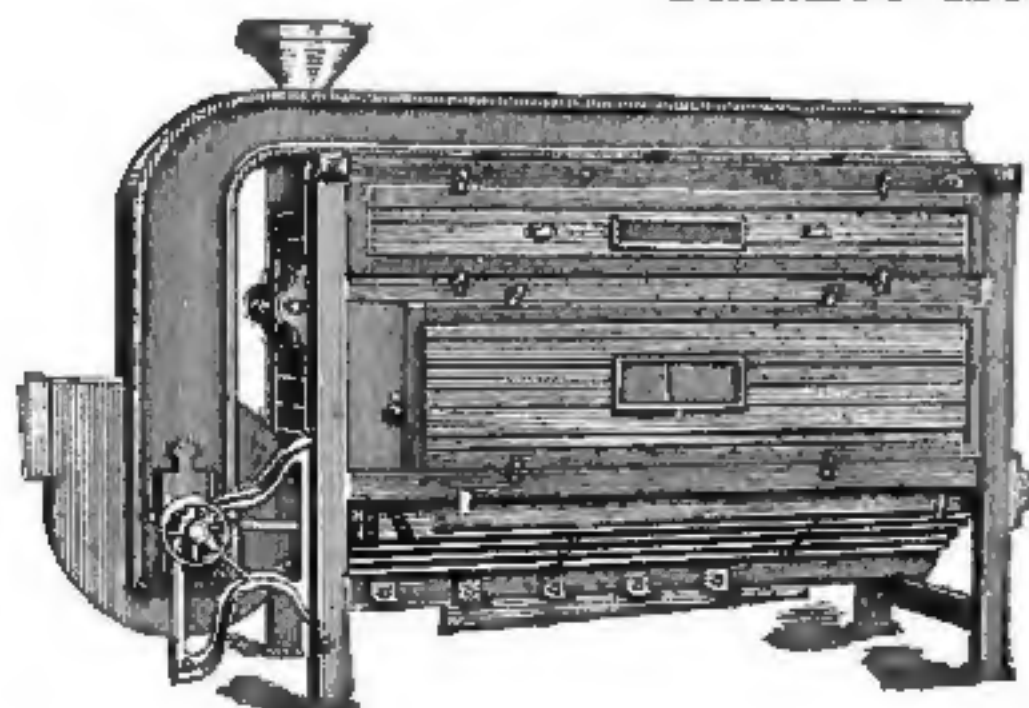
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THE ODELL FOUR-PAIR ROLLER MILLS

Are especially worthy of the attention of mill owners whose establishments are of limited capacity. They have been designed solely for the requirements of such mills, and will be found perfectly adapted thereto. They are built of the very best material; are simple in construction; are susceptible of perfect adjustment; do not consume an exorbitant amount of power; are at all times under the control of the miller; will make the breaks and clean the bran for a capacity ranging from 40 to 65 barrels per 24 hours; occupy but little space, and finally, are in operation in hundreds of mills, producing unvaryingly satisfactory and profitable results. Write us for full particulars. We will take pleasure in replying to your inquiries.

STILWELL & BIERCE MFG. CO., DAYTON, O.**WOLF & HAMAKER'S LATEST IMPROVED MIDLINGS PURIFIER AND DUST CATCHER**

The Only Machine with Two Sieves, for Fine and Coarse Middlings. The Only Machine with Balance Motion, Consequently no Jarring or Shaking.



ADAPTED to all styles of milling, high or low grinding, as fine or coarse middlings can be treated separately on one machine. Economy in space, as the machine is a double one. A perfect cloth-cleaning device. No brushing or wearing of cloth. Licensed Under All Conflicting Patents. We are the Agents for the E. P. Allis Roller Mills, and Mill Builders and Contractors. We are at all times prepared to furnish plans and estimates, and to contract for the erection of first-class mills of any desired capacity from 50 to 500 barrels. Parties contemplating Roller Mills or remodeling old mills will find it to their interest to write for Prices and Terms. Wolf & Hamaker's Latest Improved Bolting Chest. Also Mill Furnishings of Every Description.

OUR DUST CATCHER IS GIVING THE BEST OF SATISFACTION, AND OUR PRICES ARE SUCH THAT EVERY MILLER SHOULD HAVE THEM.

WOLF & HAMAKER, ALLENTOWN, PA.

ON VIEW AT PERMANENT EXHIBITION OF MILL MACHINERY, 36 BROADWAY, NEW YORK.





FLOUR-BOLT AND MIDDINGS-PURIFIER.

Letters Patent No. 306,600, dated October 14, 1884, to James Jones Faulkner and Elza Taylor Faulkner, of McMinnville, Tennessee. Figure 1 is a front elevation of a flour-bolt with improvements attached and with the doors removed. Fig. 2 is an end elevation of machine. Fig. 3 is an elevation of the opposite end, showing the spring. Fig. 4 is a transverse vertical section through $x x$ of Fig. 1. Fig. 5 is a longitudinal section. Figs. 6, 7, 8, and 9 are details referred to. The invention relates to machines for bolting flour and purifying middlings. In the drawings, A represents the framework of a flour-bolting chest, with the doors removed, so as to show the interior structure. Through the center of the bolting-chest is secured a longitudinal supporting-frame, B, in which rests the sieve or bolting-cloth C, which is made in sections, with a view to their being readily and easily removed, to be replaced by others when necessary to change the cloth, and these sections are secured to individual frames b, fitting into frame B, as shown in Figs. 5 and 8. These sectional sieves facilitate the operation in making a change in the grade quickly, without having to remove the supporting-frame. Across one end of the machine is a shaft D, having its bearings in arms d d, extending out from the frame A. To one end of this shaft is attached a band-wheel E, and near its center is secured an eccentric e, bearing against an adjustable knocker, F, which is attached to a rocker-shaft F', having its bearings in eyes f f, attached to frame below the shaft D. The knocker F has a set-screw, f', by which it may be adjusted to bear more or less against the eccentric e, and give the sieve a longitudinal vibrating motion by knocking against the exposed end of the supporting-bar B'. To the knocker F is secured a box-casting, G, containing packing g, which works against the eccentric e. To the knocker F is also attached an oil-cup H, containing a wick h, passing directly against the eccentric and forming an automatic oiler. The interior cloth curtain, I, is secured along the upper edge of the sieve and across each end of the same. The object of this curtain is to prevent the unworked material from falling off the sieve into the worked material below. Across the tail end of the sieve is secured the check-strip i, to check or hold back the material being bolted and prevent it from pouring over the tail end too fast. On the opposite end of the machine is attached a double spiral spring, I', which is wound both right and left around and toward the center of the shaft i', with a central loop, i'', in the wire to form a lever to bear against the exposed end of the middle or supporting bar, B, of the sieve, to react against the vibrating motion given to the sieve by the eccentric and knocker at the opposite end. The shaft i', has bearings with set-screws i'', the purpose of which is to tighten the shaft firmly in its bearings. Longitudinally through the upper part of the machine passes a shaft, J, on the outer end of which are band-wheels j V, by which motion is given to the shaft, and through the shaft to spiral conveyers in the bottom of the machine. On the shaft J, are secured two or more sprocket-wheels, K, carrying suitable chain belts, k, to which are attached elevator-buckets L, extending the entire length of the sieve. Within the elevator-box is a shaft, M, carrying a like number of sprocket-wheels, around which pass belts k, and by means of which the elevator-buckets are caused to pass through the elevator-box

and return the middlings or flour to the top of sieve to be worked over again and again until they are thoroughly worked, the bran and fluff all the while working toward the tail end of the sieve into the discharge spout N, for discharging all impurities. The sieve

tion next the sieve while passing over the cloth, at the same time forcing the fluff and bran to move on top as if floating on water. The middlings and flour in the meantime passing through the sieve are thus separated from the impurities. Such part of the mid-

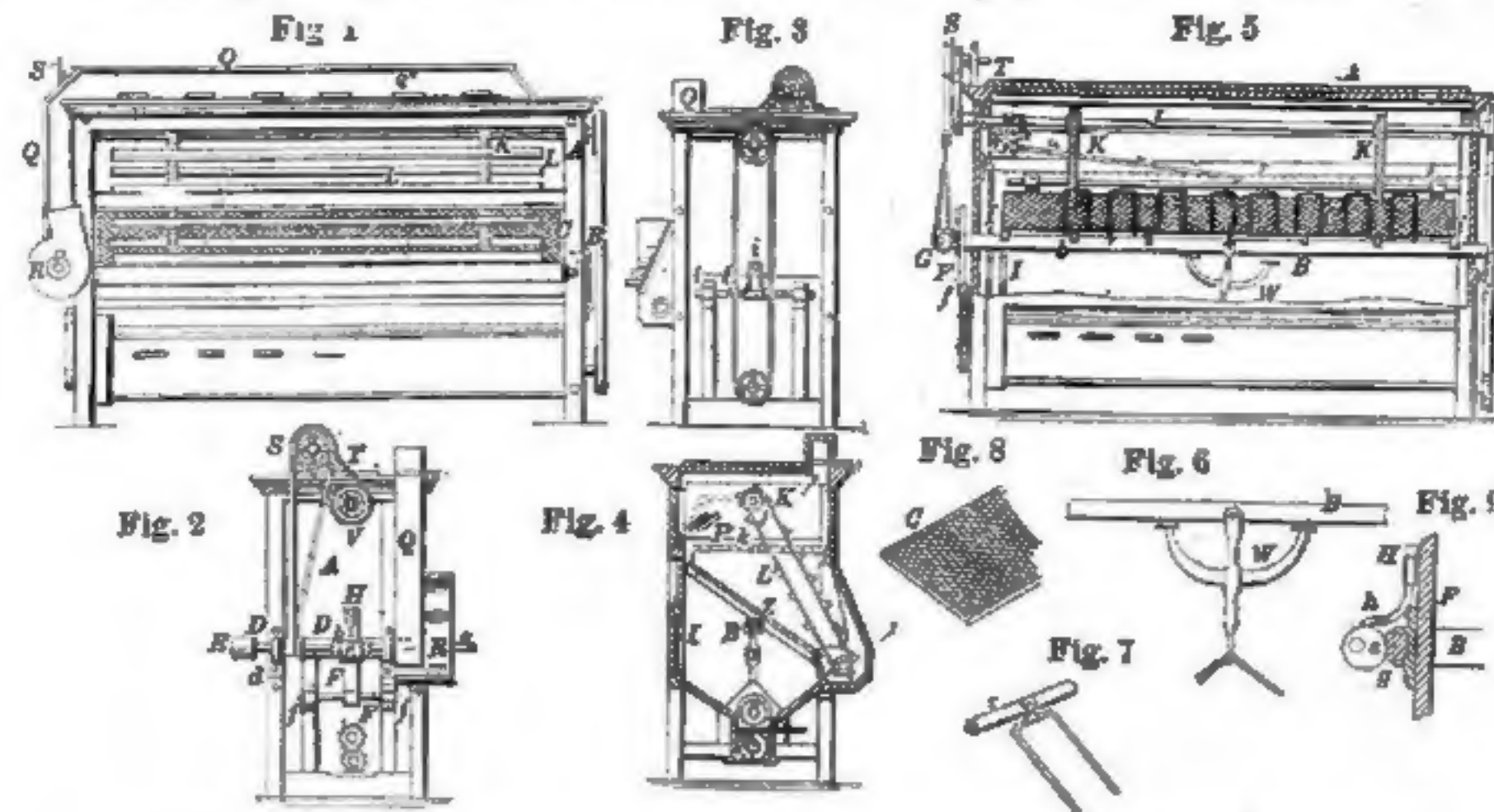
which distribute the middlings or flour again evenly upon the sieve. These wicket-boards may be pivoted at each end of the machine, so as to receive any desired lateral inclination necessary to cause an even flow of the material on the face of the sieve at its upper side. In constructing these wicket-boards, two or more boards are arranged one above the other about an inch apart, each board extending out beyond the one above it, as shown in Fig. 4. These wicket-boards catch the falling material from the elevator-buckets just above the sieve to impede its fall and cause an equal and uniform flow. The space left between the wicket-boards gives the air-currents a better chance to gather and carry the fluff to the dust-room.

MIDDINGS-PURIFIER.

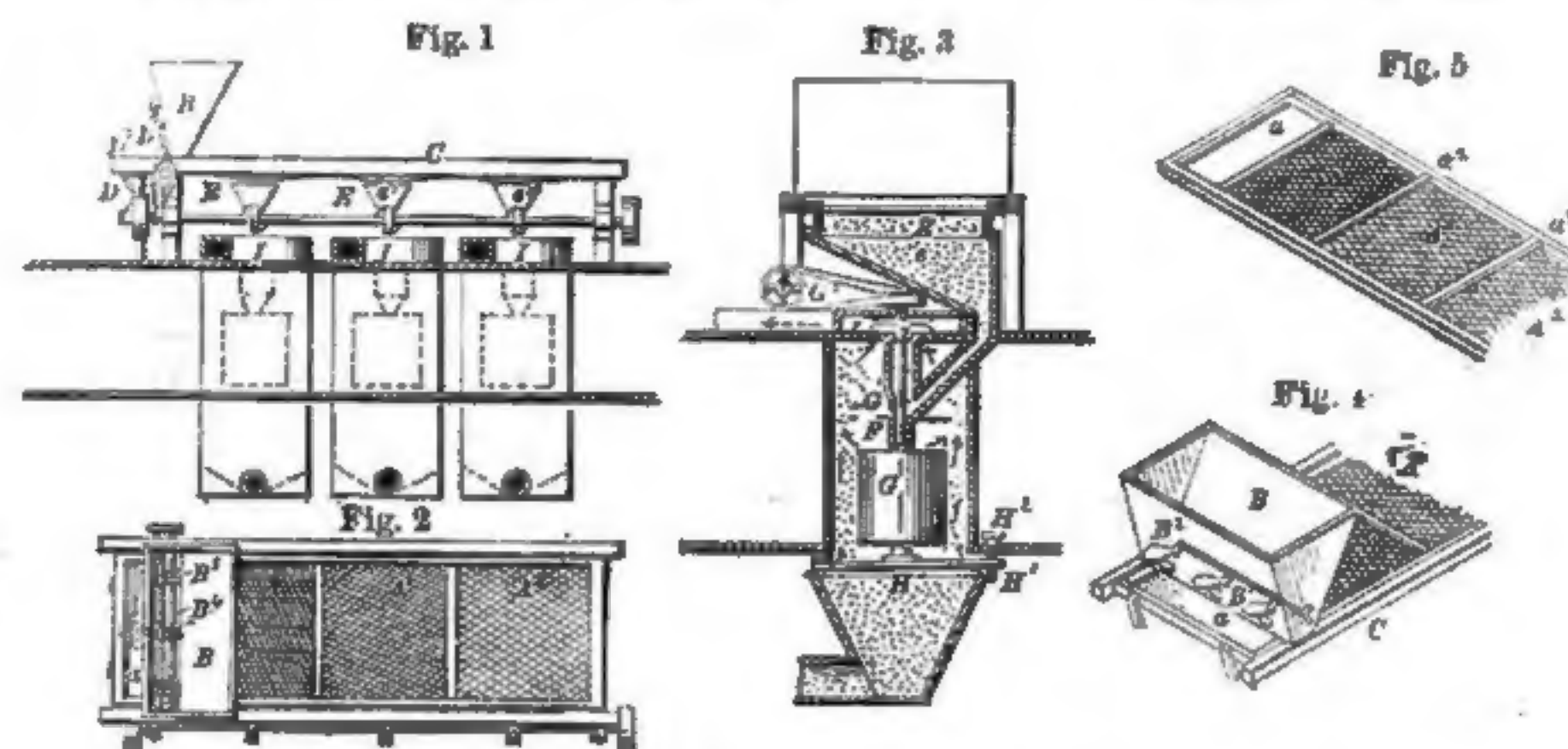
Letters Patent No. 306,567, dated October 14, 1884, to Ralph Wilcox and Ransford Wilcox, of Utica, Mich. Figure 1 is a side elevation, Fig. 2 a plan view, and Fig. 3 a sectional view, of an apparatus illustrating this invention. Fig. 4 is a separate view of the feeding-hopper mechanism. Fig. 5 is a separate view of sleeves. The mass to be purified is fed through the hopper B and the openings B' onto the solid portion a of the screen. The screen being agitated by the eccentric D', causes the mass to distribute with substantial uniformity over the slat a' onto the bolting-cloth. The grades are successively coarser in the sections A A' A'', the finer products passing through the meshes of the section A', and a still coarser through the section A'', these passing through with their corresponding impurities into the chutes or hoppers E E' E'' beneath, passing from these into the stationary hoppers e e' e'', and thence down to the purifying device. It at a considerable velocity, distributes the mass into a thin sheet by its centrifugal action, and throws it off from the drum toward the wall of the case F. The fan I creates a draft of air up through the chamber F. This air is deflected to the side of the case by the deflector J, and is thus caused to act upon the middlings along that portion where the material is spread out to its thinnest consistency. The particles here being most widely separated, the air can act freely, to separate the lighter impurities, permitting the middlings to fall by their superior gravity into the receiver K beneath, while the impurities are drawn into the fan and blown out to any suitable setting-chamber. Should the feed upon the drum G be too rapid, or not sufficiently rapid, the trouble may at once be remedied by adjusting the drum either up or down by means of the adjusting-screw H'. It is thus seen that the suction of the fan is not required to be so great as to separate from the original mass all of its impurities, but each fan is only required to operate upon middlings of a certain grade, and its speed can be so regulated as to effect a perfect separation from this uniform grade of all impurities, without danger of wasting the middlings themselves. The fans in the other chambers, F, and their particular adjustments are all capable of regulation, so as to suit the proper grade in each chamber F.

MACHINE FOR SEPARATING LIGHT AND HEAVY SUBSTANCES.

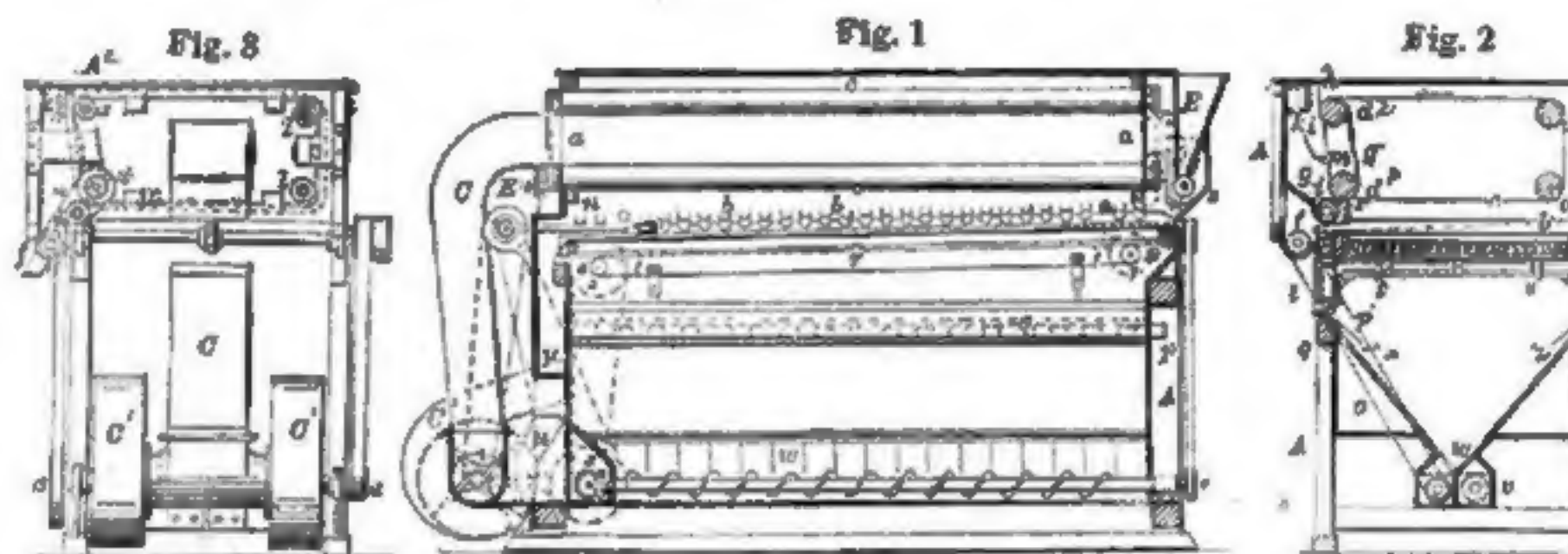
Letters Patent No. 306,648, dated October 14, 1884, to Heinrich Seck, of Dresden, Saxony, Germany. This invention relates to apparatus for separating by means of air-suction light and heavy substances, and is more particularly intended for the purification of grits and middlings in the manufacture of flour, with a view to obviate the danger of fire and explosion arising from the deposition of the dust sucked from the said middlings, and heretofore generally collected in separate dust-collectors or dust-chambers. Figure 1 is a longitudinal vertical section of a machine constructed according to this invention. Fig. 2 is a



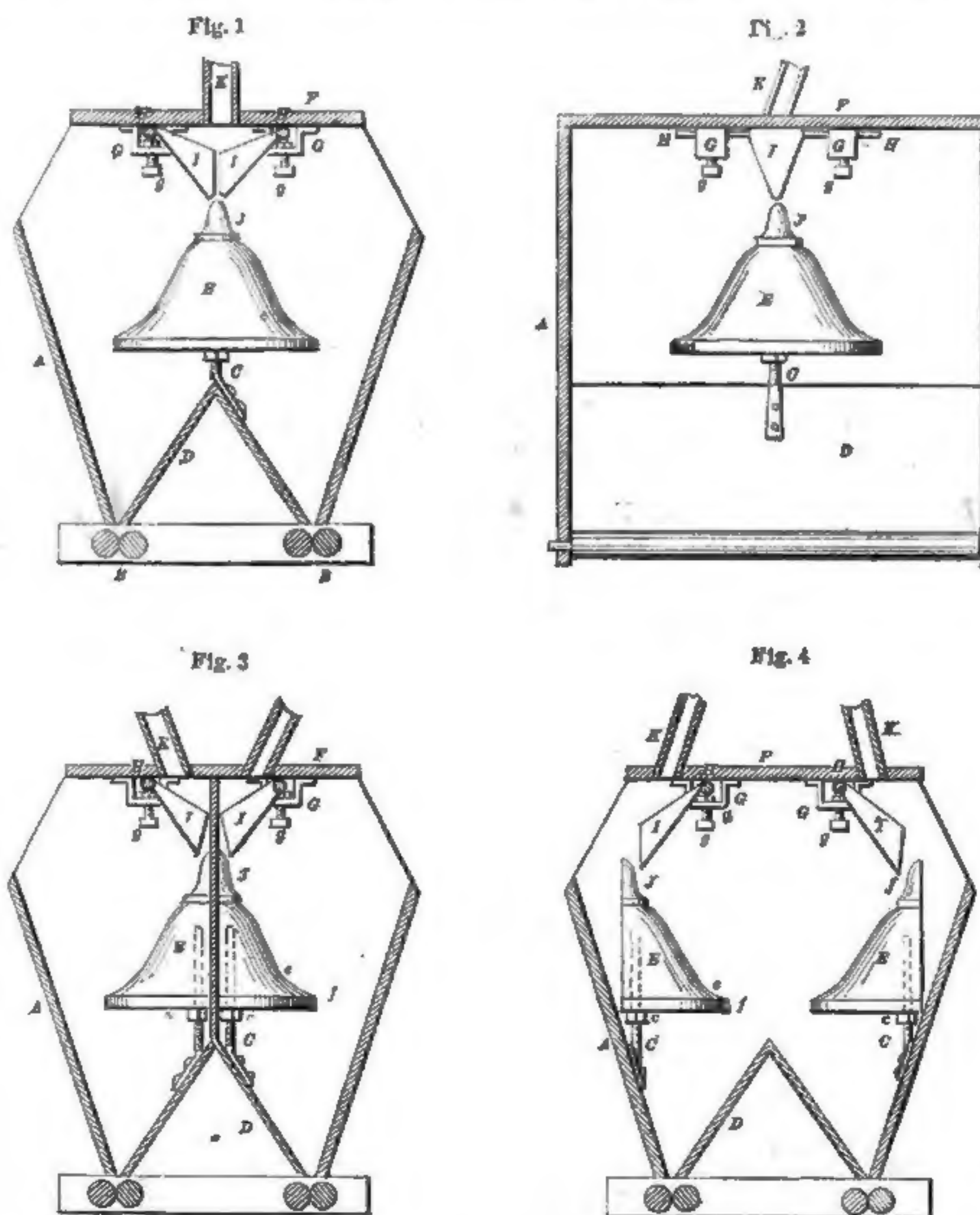
PATENT NO. 306,600. FLOUR-BOLT AND MIDDINGS-PURIFIER.



PATENT NO. 306,567. MIDDINGS PURIFIER.



PATENT NO. 306,648. MACHINE FOR SEPARATING LIGHT AND HEAVY SUBSTANCES.



PATENT NO. 306,673. FEED MECHANISM FOR ROLLER-MILLS.

C having a lateral inclination instead of a longitudinal one, the middlings or flour placed thereon to be cleaned of fluff, bran, or foreign substances glide freely on the incline by their own gravitation. The middlings, or flour, being of greater specific gravity than the bran or fluff, occupy a posi-

tion next the sieve while passing over the cloth, at the same time forcing the fluff and bran to move on top as if floating on water. The middlings and flour in the meantime passing through the sieve are thus separated from the impurities. Such part of the mid-

transverse section of the same. Fig 3 is an end view of the same. The operation of the machine is as follows: The substances to be separated fall upon the sifting surface of the rocking sieve a from the hopper E², and are moved forward on the said sieve by reason of its rocking movement, which causes the heavy portions of the substances to go to the bottom and drop through the sifting-surface into the conveyer v or v' below. At the same time the ventilators C' will draw the air through the filtering surface of the filtering-cloth c' arranged immediately above the rocking sieve a, the flow of air thus produced acting quite uniformly upon every point of the substances to be separated, so as to draw off the lighter portions of the same and carry them upward toward the surface of the filtering-cloth c.

FEED MECHANISM FOR ROLLER-MILLS.

Letters Patent No. 306,873, dated October 14, 1884, to Julius Busch, of Marine, Ill., assignor to himself and John Stevenson, of same place. Fig. 1 is a cross-section of a portion of a double-roller mill and a side view of invention as arranged for feeding one kind of material to both sets of rolls. Fig. 2 is a section at a right angle to Fig. 1, showing a front view of invention. Fig. 3 shows invention as applied to a double-roller mill for feeding a different grade of material to each set of rolls. Fig. 4 shows a modified arrangement of the device, and Fig. 5 is a detail of the supporting-bracket for the feed-spout. A indicates the hopper, and B B the grinding-rolls, of a double-roller mill. D D are cant-boards for directing the material to the rolls. Adjustably supported within the hopper from the cant-boards or the sides of the hopper by a threaded rod, C, having an adjusting-nut, c, is a half-bell-shaped distributor, E, as shown in Figs. 3 and 4; or, as shown in Figs. 1 and 2, two of these half-bell-shaped distributors may be combined to form a bell-shaped distributor, E'. To the rod H is fixed the inclined spout I, the lower end of said spout being disposed directly over or nearly over the apex of the distributor to deliver the material upon the latter, while the rod H itself is supported within slotted brackets G, fastened to the under side of a board, F, or to the top

board of the hopper, said rod being held firmly against the board, to prevent the turning of said rod, by the action of the screws g and their nuts g', resting upon the bottoms of said brackets, the angle of adjustment of the spout to deliver the material higher or lower having been previously effected. The slots in the bottoms of the brackets permit of the lateral adjustment of the rod H and its attached spout I with relation to the distributor to admit of the outer delivering end of the spout being adjusted farther from or nearer to the distributor, according as said end of spout is raised or lowered. A smaller distributor, J, similar in form to the main distributor E, is adapted, by the insertion through its bottom flange, it may be, of screws entering the distributor E, to be placed upon the apex of the main distributor E when fine soft material is being fed to the rolls, two of which distributors J may be united, as shown at J, Figs. 1 and 2, for use with the distributor E'. The distributor E has its face, as has also the face of the distributor E', provided with a concavity, e, and with a flaring lip, f, to effect the even spreading and delivery of the middlings upon the cant-boards or sides of the hopper. K is the delivery spout to the hopper for the material to be fed to the rolls. The distributor E or E' may be adjusted higher or lower relatively to the cant-boards or sides of the hopper by the nut c. The spout I, for delivering the material upon the distributor, may be adjusted to deliver the material at any point upon the distributor by means of the rod H, the set-screws g, and the slotted brackets G.

WILHELM & BONNER, Solicitors of Patents,

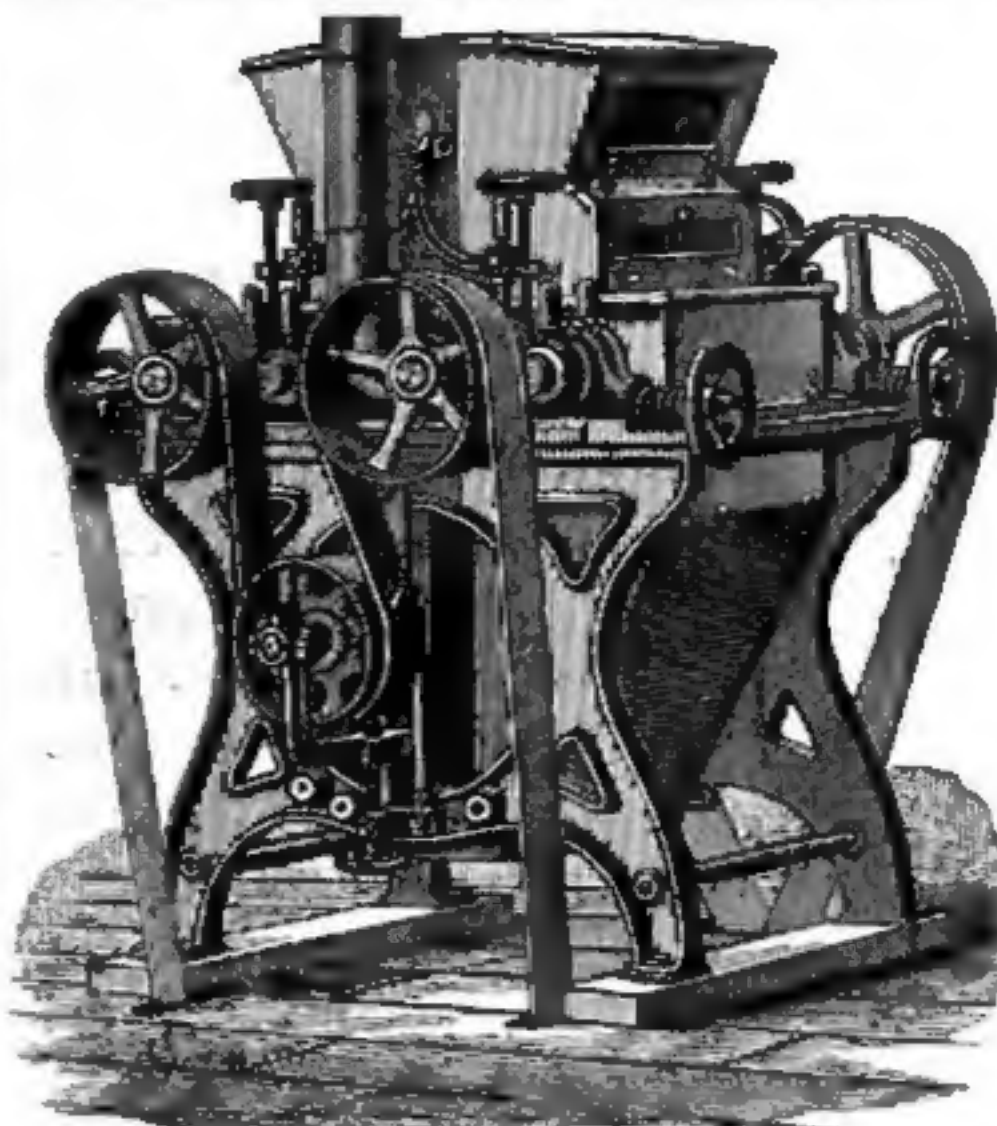
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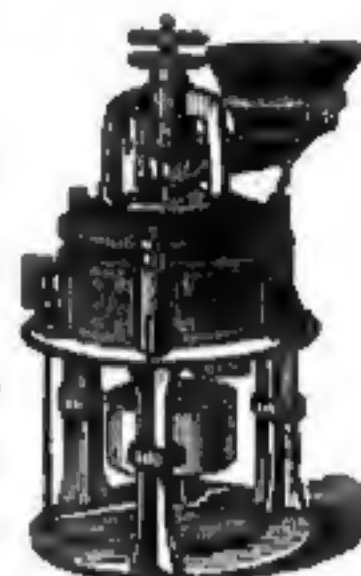
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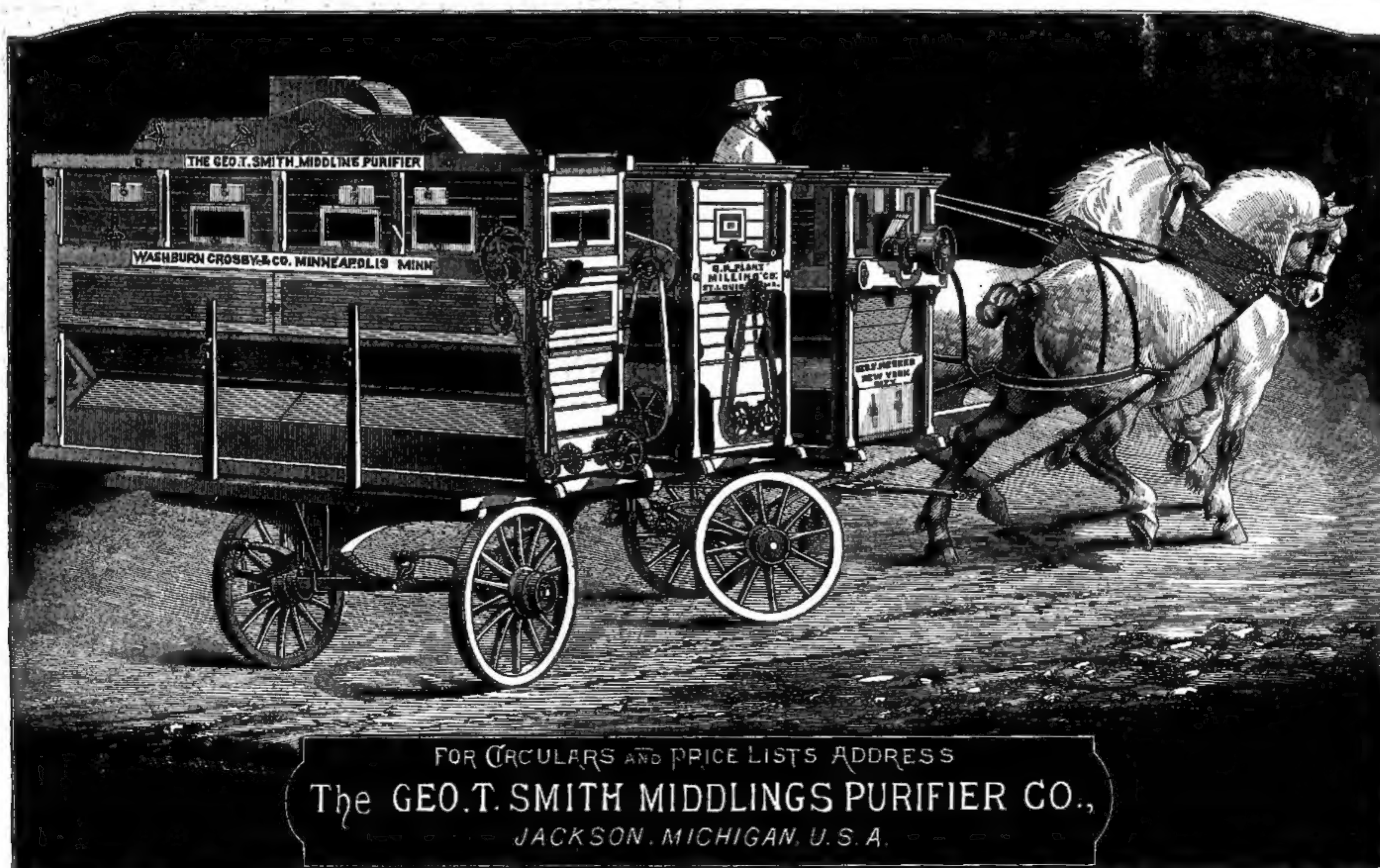
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THE CONSUMPTION OF SMOKE.

[Translated from the "Concordia."]

NOBODY cares to dispute that smoke is a great nuisance, which increases in proportion as our cities grow in size, as the coal is used as a source of heat more and more, and as our various industries are closer and closer crowded into small areas. In the last mentioned case, the high chimneys, sending forth large volumes of smoke high into the air, attract our attention first, and convince the average observer that here an improvement is needed above all others, and most people ignore the fact that a large number of small chimneys on dwelling houses can, in their aggregate, be as troublesome as the few large ones. That the question of smoke prevention is far from being settled, is well illustrated by the fact that the chimney on the building of the recent Higgins exhibition, at Berlin, issued its regular quantity of smoke to the surrounding atmosphere; although we may well believe that the managers would have gladly prevented the smoke, if practicable.

We can congratulate ourselves that in spite of the existing difficulties, the problem is attacked again and again in order to secure a smokeless consumption of coal. If anybody, however, believes that the solution of the problem will inaugurate a great saving in the expenditure for coals, he will find that he has made a grave mistake. The misunderstanding of the matter is almost universal, and is based upon the assumption that the black smoke contains a very large quantity of unconsumed carbon. This is an illusion, caused by the minute divisions of the coal particles as they rise from the chimney in large black clouds of smoke. The quantity visible in this manner, differs largely with the system of firing, the kind and quality of fuel, the care exercised, etc., but the coal actually lost in smoke amounts to less than one per cent in the majority of cases, and rarely exceeds one per cent, according to careful investigations.

It is well known that our steam-engines barely realize ten per cent. of the theoretical heat of the coals, but it is a mistake to imagine the other ninety per cent. thrown into the atmosphere as smoke. This heavy loss is due to other causes and conditioned by the facts that all the generated heat cannot be absorbed by the water and utilized in the production of steam; and again, that the absorbed heat cannot be transformed into power without loss, etc. If, however, as demonstrated, not more than one per cent. of coal is lost as smoke, a consumption of that smoke will not constitute a very large saving, and even this saving is only apparent, because the consumption can be accomplished only by an increased admission of air to the fire, which again necessitates a loss of heat somewhere. In England no less than 2000 patents have been issued during the past 40 years for smoke-consuming apparatuses, but in spite of the endless number invented in every country, a practical success has not yet been obtained, and almost all the latest inventions in this line resemble more or less the older forms which were tested and rejected long ago. Of course, any endeavor to secure the consumption of smoke should be encouraged, not in the hope of a large saving of fuel, but simply aiming at the prevention of a more and more increasing and intolerable nuisance.

* * The theory of the steam engine, like every other scientific system, rests, according to Prof. Thurston, upon a foundation of facts ascertained by experiment,

and of principles determined by the careful study of the laws relating to those facts, and controlling phenomena, properly classed together by that science. Like every other element entering into the composition of a scientific system, this theory has been developed subsequently to the establishment of its fundamental facts, and the history of progress in the art to which it relates shows that the art has led the science from the first. The theory of the steam engine includes all the phenomena and all the principles involved in the production of power, by means of a steam engine from the heat energy derived from the chemical combination of a combustible with the oxygen of the air acting as a supporter of the combustion. The complete theory therefore includes the theory of combustion; the consideration of the methods of development and transfer, and of losses of heat in the steam boiler; the examination of the methods of transfer of heat-energy from boiler to engine, and of waste of heat in this transfer, and, finally, the development of mechanical energy in the engine, and its application, beyond the engine, to the machinery of transmission, with an investigation of the nature and method of waste in this last transformation.

* * The Electrical Conference, at Philadelphia, approved the suggestion of Professor Preece, that the horse power be raised to 44,000 foot pounds, the equivalent of 1,000 watts. What say the mechanical and civil engineers, queries the American Engineer. Will the resolved that, etc., of a body of scientists, effect this change, or will the old unit persist? The experience with measure once established in common use is, that to change them is well nigh impracticable. Perhaps, if the agreement is sufficiently important, it would be easier for the electricians to change before their measures are unalterably fixed by every-day commercial usage.

* * The search for natural gas deposits, says the Philadelphia Record, is now prosecuted with almost as much energy in western Pennsylvania as the original quest for petroleum. The gas is used for making iron, producing steam for cooking, heating and lighting purposes, and is thus made to take the place of coal and more costly fuel. As there is a large area of gas-producing territory, extending southwestward and northwestward from the oil fields, there is no reason to doubt that the supply will be maintained for many years. Hundreds of companies are being formed to develop leased properties.

* * The question whether the English sparrow is a useful bird or not has been discussed during the past few years without any satisfactory conclusions. Last year, at the formation of the Ornithological Association at New York City, a committee of the best known experts on birds and birds' habits was appointed to investigate the matter and at the recent meeting of the Association this committee reported that "the English sparrow must go," as its noxious qualities so far outweigh its good qualities, that its absence is considered more beneficial to fields, orchards and gardens, than its presence.

* * We learn of hard coal veins being discovered by the geologists—one seven feet, one eight feet, one nine feet and one eleven feet, all being some inches over even feet. That there is an abundance of fine anthracite coal in Dakota is a settled fact.

* * It is computed that the Mississippi River carries every year to the Gulf of Mexico 500,000,000,000 tons of sediment.

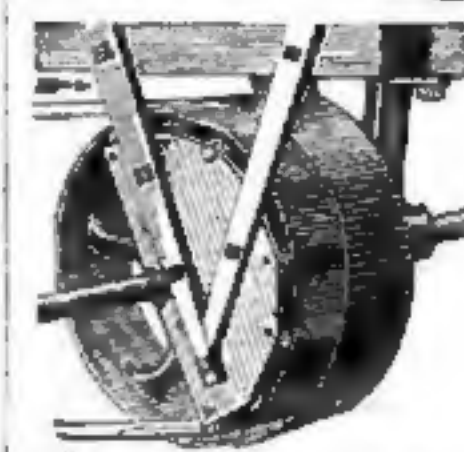
* * The electric lighting apparatus on the dome of the court-house at Wabash,

Indiana, was, on the evening of the 22d inst., wrecked by a flock of wild geese.

* * It is no exaggeration to say that \$10,000,000 does not exceed the value of the grass annually consumed by the prairie dogs of Northwest Texas.

* * The results of the latest investigations by Prof. William A. Rogers, gives the length of the meter as 39.37027 inches.

The Wellington Belt Holder.



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BETTER AND FAR CHEAPER THAN DEAD PULLEYS.
Our Customers Like It and Order More.

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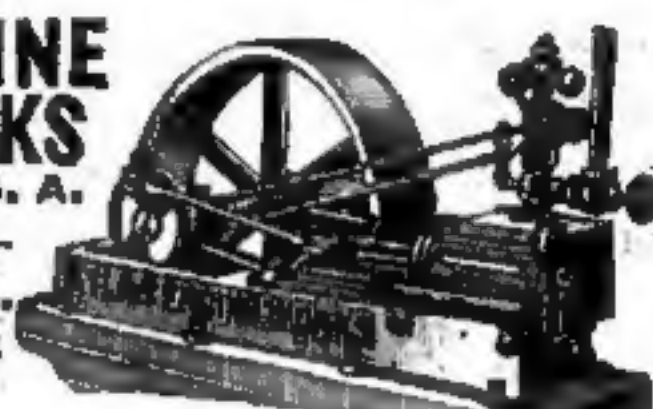
ATLAS ENGINE WORKS

INDIANAPOLIS, IND., U. S. A.

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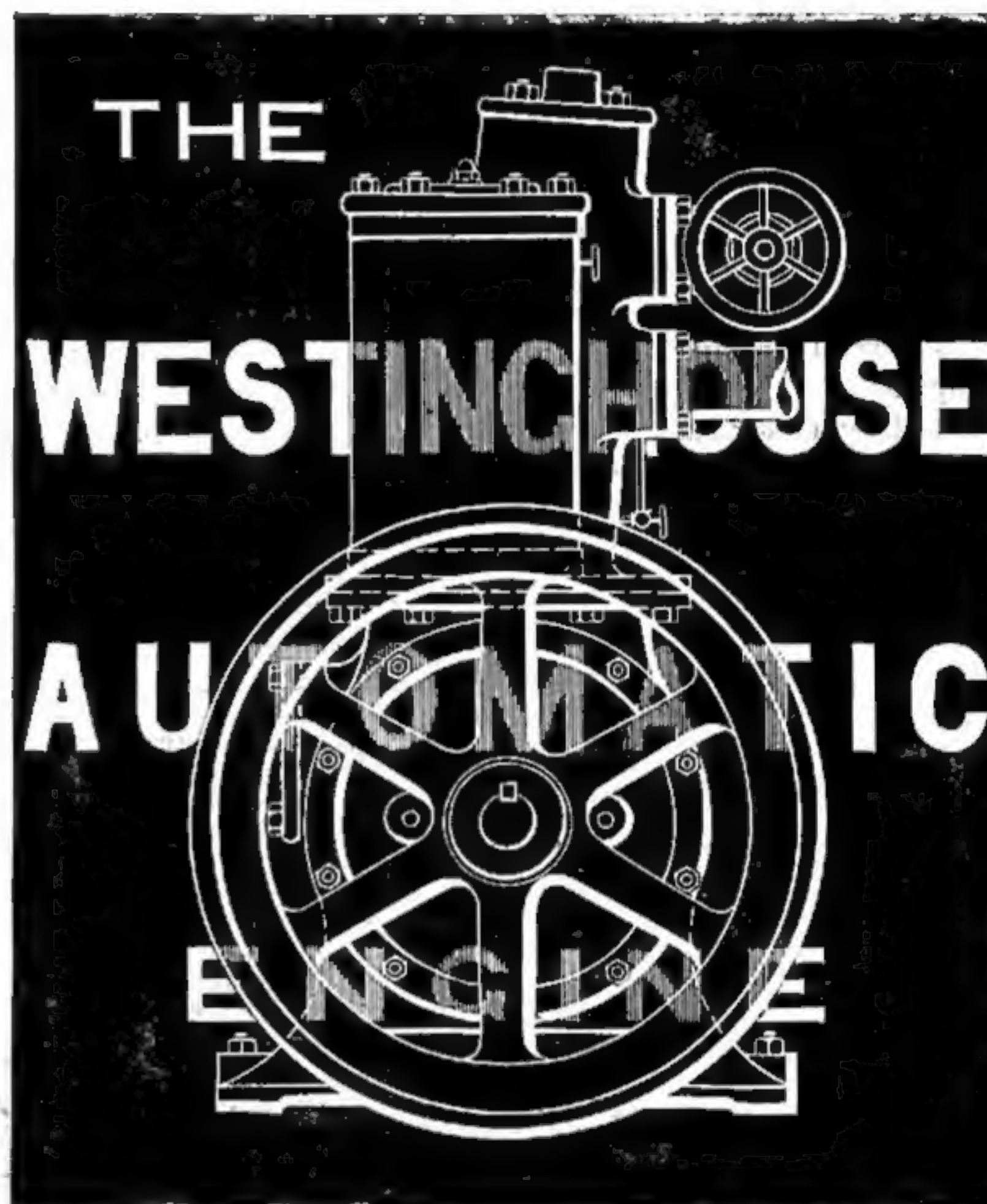
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For Water Wheels

Cohoes Iron Foundry & Mch. Co. Send for Catalogue. Cohoes, N. Y.

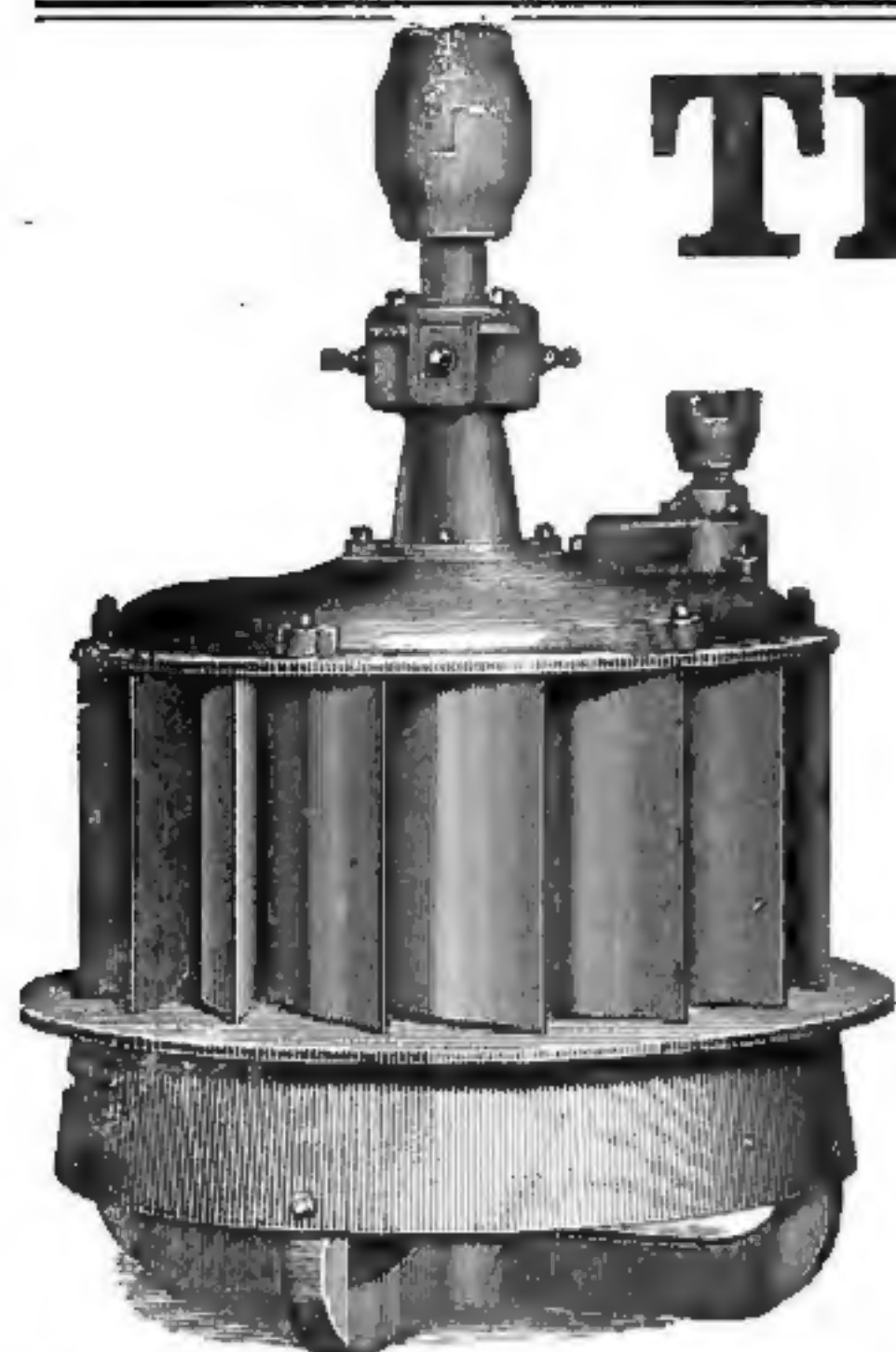
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AN IMPORTANT INVENTION FOR MILLERS.



This invention consists of a Glass Tube Joint, which can be made to correspond in size to and be inserted in any tin spout used to convey grain, meal, etc., in the operation of Grinding Flour and other substances. A section of the spout is thereby rendered transparent, enabling the miller, or any one passing by, to see at a glance whether the contents of the spouts are properly running. By the use of this appliance the necessity of frequently opening spouts is avoided, and the consequent saving of time and flour is very important in an economical point of view. These Glass Tube Joints have given the most complete satisfaction, and are esteemed as an indispensable requisite wherever they have been applied. Full information furnished on application to the inventor.

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Size Wheel.	Head in Ft.	Horse Power.	Per Cent Useful Effect
15-inch.	18.06	30.17	.8932
17½ in.	17.96	36.35	.8930
20-inch.	18.21	49.00	.8532
25-inch.	17.90	68.62	.8584
30-inch.	11.65	52.54	.8676

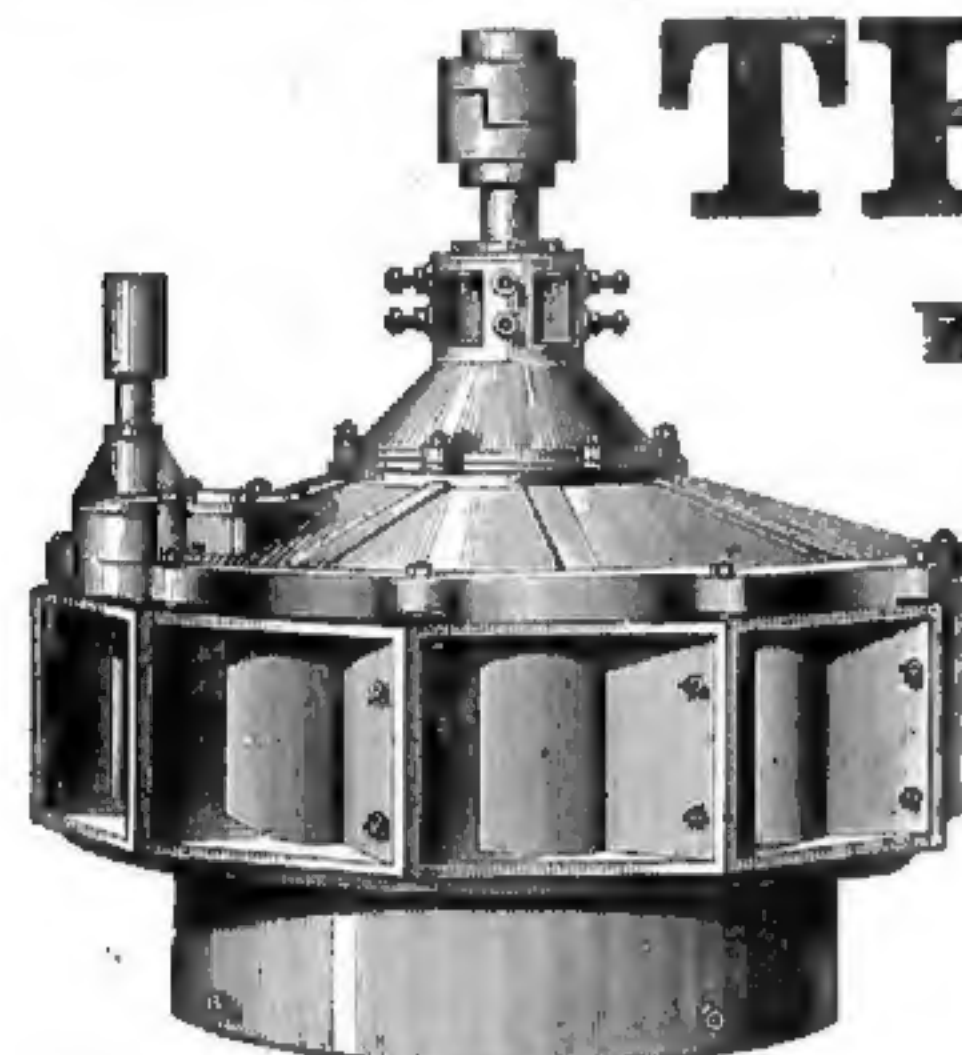
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Such results, together with its nicely-working gate, and simple, strong and durable construction, should favorably commend it to the attention of ALL discriminating purchasers. These Wheels are of very Superior Workmanship and Finish, and of the Best Material. We also continue to manufacture and sell at very low prices the

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From the Records of Actual Tests at the Holyoke, Mass., Testing Flume:

PERCENTAGE OF EFFICIENCY.

	Full Gate.	¾ Water.	½ Water.	¼ Water.
24 Inch Wheel.	.8486	.8416	.8208	.8008
24 Inch Wheel.	.8306	.7910	.7700	.7008
24 Inch Wheel.	.8078	.7578	.7276	.6786
30 Inch Wheel.	.8000	.8011	.7814	.6850

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MADE BY JAMES LEFFEL & CO.

The "OLD RELIABLE"

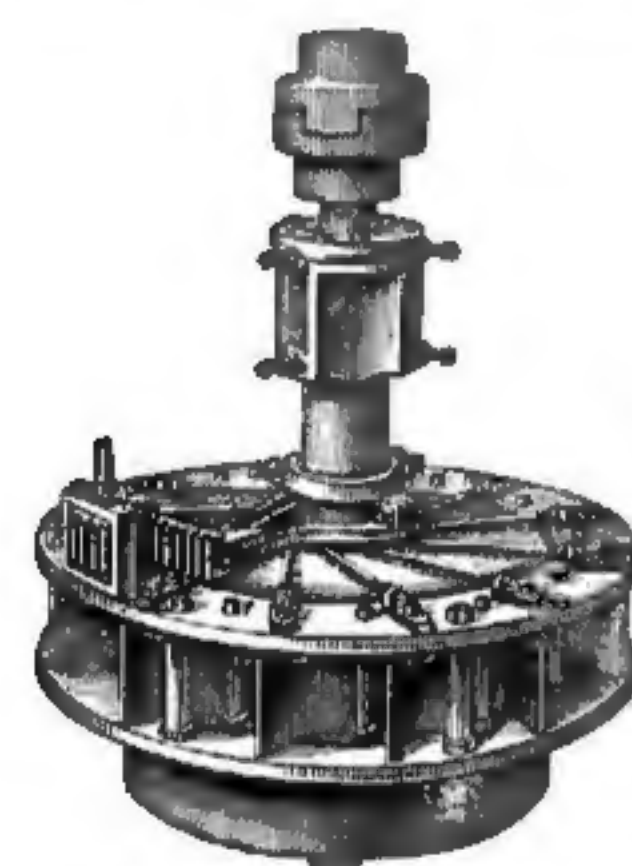
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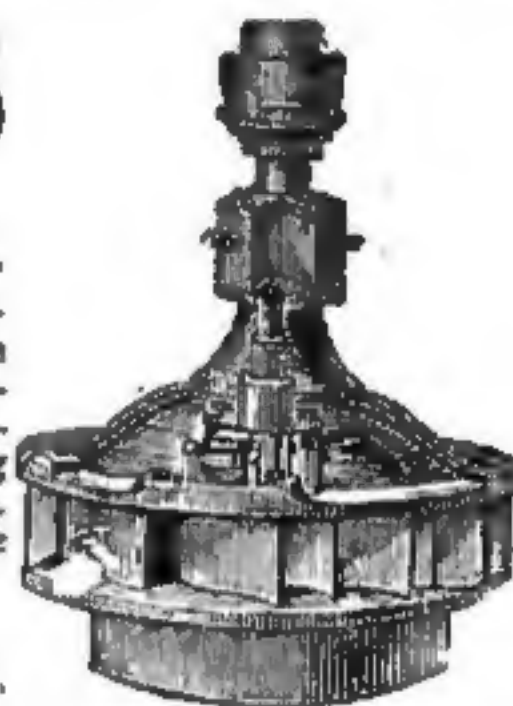


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RELIABLE Turbine Water Wheel.

This wheel is acknowledged one of the best on the market. Has valuable improvements in the construction which is commanding the attention of buyers. Send for catalogue and price list. T. B. MERCER, WEST CHESTER, PA.



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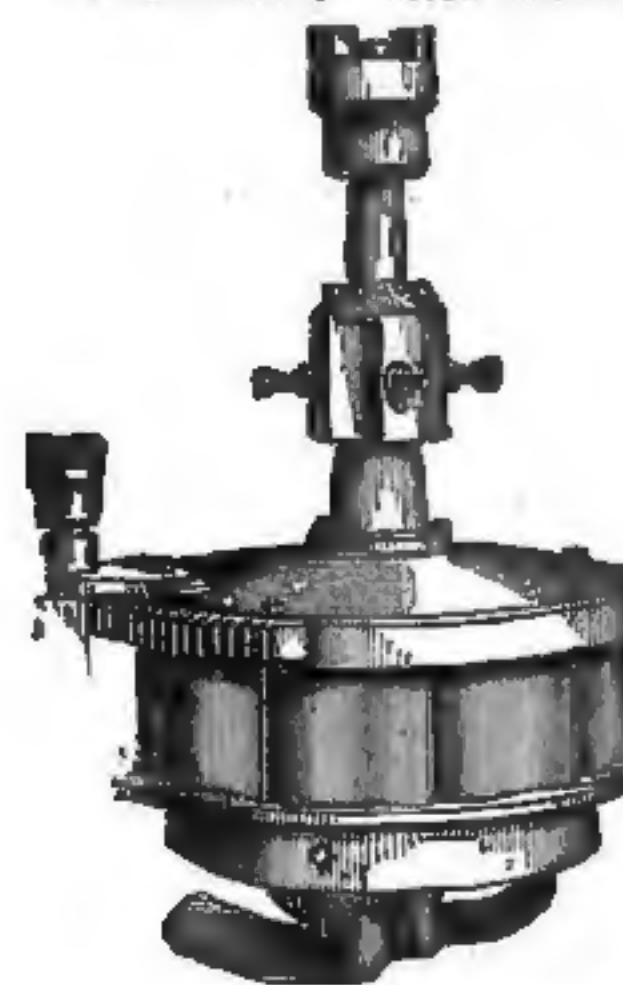
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Empire Portable Forge Co. Cohoes, N. Y. Send for Catalogue.

LESNER'S IMPROVED TURBINE.

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Improved Success Percentage.

Full Gate.	86.29
¾ Gate.	86.07
½ Gate.	81.90

This Wheel is Durable and Cheap.

Send for Pamphlet to S. MORGAN SMITH, YORK, PA.



This Wheel gives high results, and is acknowledged the best, most practical and efficient Turbine made. For Simplicity, Durability, and Tightness of Gate it has no equal.

State requirements and send for Catalogue to T. C. ALCOTT & SON, MOUNT HOLLY, N. J.

POOLE & HUNT'S LEFFEL TURBINE WATER WHEELS

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MACHINE-MOLDED MILL GEARING

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Engines, Boilers, Mixers and General Outfit for Fertilizer Works.

Special Attention given to Heavy Gearing. Shipping Facilities the Best in All Directions.

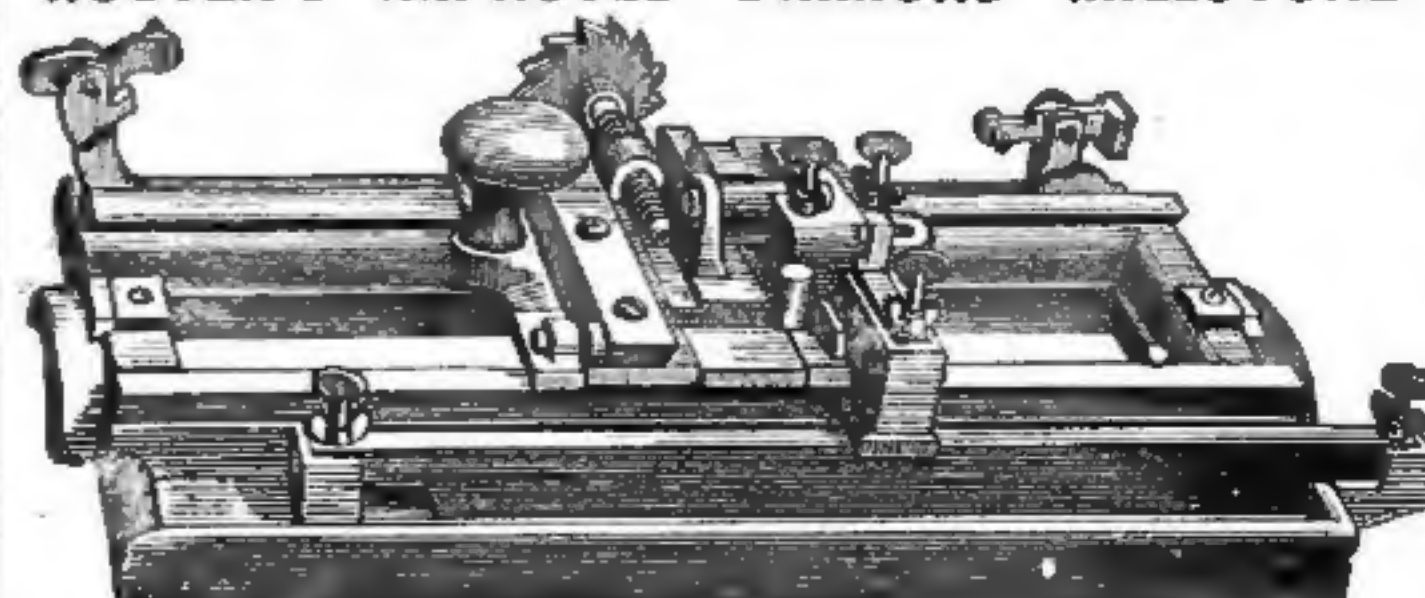
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HOOVER'S IMPROVED DIAMOND MILLSTONE DRESSING MACHINE.

ADAPTED TO ALL KINDS OF DRESSING.

No. 1, to face and crack	\$25.00
No. 2, to face, crack, dress furrows, and will dress any size stone	45.00
No. 3, to face, crack and dress furrows	40.00

Will do as good work, and is more easily adjusted than any other machine. Sent on 30 days' trial. Address for circulars, containing full information.



C. S. HOOVER, Patentee and Manufacturer, 409 East King St., LANCASTER, PENN.



Notes from the Mills.

Boyd & Allison, of Waynesville, N. C., are building a two-run mill.

The Salinas (Cal.) Flouring Mill Company has been attached for \$75,257.

J. W. Morris has just completed a large flour mill at Morning Star, N. C.

D. M. Butler, of Palestine, Texas, contemplates building a mill at that place.

Arrangements have been completed at Newport, Ark., for the erection of a new grist mill.

A \$10,000 flouring mill is to be erected at Dawson, Dak., having a capacity of sixty barrels a day.

By the end of last month the elevators on the Northern Pacific had taken in 2,372,000 bushels of wheat.

J. W. Zaring, of Shelbyville, Ky., has yielded to the pressure and will at once change to the roller system.

Non-association millers at Minneapolis are kicking about the refusal of the Manitoba to deliver wheat.

Farmers near Grand Forks are holding back their wheat for better prices; very little is being marketed there.

The Case Manufacturing Company, Columbus, O., have an additional order from Lucas & Aiken, Uhricksville, O.

James Coleman, Carrollton Ga., will soon begin the erection of a large flour mill and barrel factory at Villa Rica, Ga.

Waxahachie offers the best field in Texas for a cotton-seed mill and a flour mill. So says the Waxahachie Mirror.

Mr. G. W. Cunningham, Tiffin, Ohio, has added one of Allis & Co.'s double roller mills to the machinery of his mill.

One double roller mill from Messrs. E. P. Allis & Co., was put into the mill of J. Kratochwill, at Dayton, Ohio.

J. Gregg, Blanchester, Mo., has placed an order for one Little Giant break machine, with the Case Mfg. Co., Columbus, Ohio.

The Sanborn Elevator Co., at Sanborn, has purchased 1,000 hogs, to be fattened at the elevators of the company in Dakota.

Messrs. A. & H. Wilcox of Jackson, Mich., has improved his mill by the addition of a roller mill from E. P. Allis & Co., Milwaukee.

Messrs. R. Thomas & Co., of Newman, Ill., have added one of E. P. Allis & Co.'s double roller mills to the outfit of their mill.

Joseph Biers, Fredericktown, O., is putting in a No. 1 single purifier, furnished by the Case Manufacturing Company, Columbus, O.

Duluth Union Improvement & Elevator Co.'s elevator E, capacity 800,000 bushels, was to be ready for the reception of grain Oct. 29.

Mexico wants twenty million bushels of American corn, but freights are so high, the corn there will be too high for use by common people.

A No. 2 four-break machine has been sold to Messrs. J. D. & P. Thos. Brouck of High Falls, N. Y., by Messrs. E. P. Allis & Co., Milwaukee.

Five double roller mills have been put into Messrs. R. McAduo & Co.'s mills at Tiffin, Ohio, by Messrs. E. P. Allis & Co., of Milwaukee.

The Case Manufacturing Company, Columbus, Ohio., have an additional order from A. B. Childs & Son, London, England, for breaks and rolls.

The Case Manufacturing Company, Columbus, O., have an additional order from Click & Miller, Dayton, Va., for breaks, rolls, scalpers, centrifugals, &c.

The Case Manufacturing Company, Columbus, O., have the order of B. M. Allison, Fairview, W. Va., for breaks, rolls, scalpers, purifiers, centrifugals, &c.

Wheat is low enough in price on the Canadian Pacific road. The range is from 40 to 58 cents per bushel, the latter being the highest figure at any one point.

Among the orders recently received by the Case Mfg. Co., Columbus, Ohio, is one for a pair of rolls with patent automatic feed from M. D. Massie, New Canton, Ill.

The Manitoba road has reduced its rate on grain to Duluth three cents per bushel. Farmers will rejoice at this news as it will make wheat worth just so much more to them.

Preparatory to a transformation into a complete roller mill, Mr. M. J. Church, of Fresno, Cal., has bought four double roller mills from E. P. Allis & Co., of Milwaukee.

An additional order from A. Comingo, Pleasant Hill, Mo., for a pair of rolls and one Case centrifugal reel, has been received by the Case Manufacturing Company, Columbus, O.

Detroit, Minn., it is said, needs another elevator badly, and if a private individuals cannot be found to take charge of the matter the business men and farmers may organize a stock company.

Mr. A. T. Parker of Mason City, Iowa, has put four double roller mills and other special machinery into his mill. The whole outfit was furnished by Messrs. E. P. Allis & Co. of Milwaukee.

The Pillsbury A mill, Minneapolis, Oct. 20, turned out 6,197 barrels of flour, or about 800 barrels more flour than was ground in any previous twenty-four hours' run. The run is the biggest on record.

Castree, Mallory & Co., Flint, Mich., have ordered two pairs of rolls with patent automatic feed, from the Case Manufacturing Co., Columbus, to be placed in Samuel Howard's mill at Flint, Mich.

George T. Jackson & Co., millers at Augusta, Ga., sold out Oct. 25, to Thomas A. Scales, subject to the liens of creditors. Their liabilities are \$100,000; nominal assets, \$125,000; preferred creditors, \$85,000.

Simpson & Gault Manufacturing Company, Cincinnati, Ohio, have ordered a "Little Giant" break machine from the Case Manufacturing Co., Columbus, O., to be used in the mill of W. H. Kremer, Medora, Ind.

The Case Manufacturing Company, Columbus, Ohio, have an order through Castree, Mallory & Co., Flint, Mich., for two pairs of rolls and one No. 1 single purifier, to be shipped to Matthew Clapp, Rogersville, Mich.

At Chesney, Ind., Oct. 17, the Chesney flour mills were burned. Insurance, \$10,000, on mill building and machinery, and \$2,000 on stock, all in mill mutuals. The fire is supposed to have been of incendiary origin.

The contract for a complete roller mill was given to Messrs. E. P. Allis & Co., of Milwaukee, by Messrs. Millford & Wilson, of Ord, Neb. Four double roller mills and the other necessary machinery have been promptly shipped.

The transformation of the mill of Messrs. J. Dillon & Son, at Marengo, Ia., into a roller mill was commenced by ordering from Messrs. E. P. Allis & Co., of Milwaukee, 2 four break machines, two double roller mills and other necessary machinery.

The outfit of a new roller mill at Holdredge, Neb., owned by Messrs. Hill & Fry, was recently shipped from Milwaukee by Messrs. E. P. Allis & Co. The outfit consisted of a 10x30 Reynolds Corliss Engine, two double roller mills, a No. 2 four-break machine and various other accessories.

A. Hulshizer, Utica, O., has decided to put in a complete outfit of breaks, rolls, purifiers, scalpers, centrifugals, bolting chests, &c., for a full gradual reduction mill on the Case system, using eleven pairs of rolls with automatic feed. The Case Manufacturing Company, Columbus, O., have the contract for furnishing the same.

As we go to press we learn with regret of the death of Mr. John T. Hecker, which sad event occurred on Sunday last, Oct. 26. Mr. Hecker was a member of the well known New York firm of Geo. V. Hecker & Co., millers, and as a mark of respect to his memory the flag of the New York Produce Exchange was held at half-mast on Monday last. The deceased was but 25 years of age.

Elevator men in the neighborhood of Rochester, Minn., are complaining that since the recent rains the grain brought in has been almost without exception, too damp to take in. Even stacks that seem in good condition outside, proved to be in a poor state of preservation when opened. Of course poor stacking is in wretched condition, much of the oat crop being only fit for hog feed. Buyers also complain that much of the wheat in that region is affected with smut.

The Marine Record says that a government engineer is preparing estimates and plans for raising the banks of the Welland canal two feet. This will allow large steamers of the United States and Canadian fleets plying on the upper lakes to pass through the canal without unloading part of their freight at Port Colborne and proceed as far as Kingston by the St. Lawrence route. At this point the cargo will be unloaded and placed on barges and taken to Montreal. This change will give an impetus to the shipping trade both by the St. Lawrence and Erie routes. Then will come the deepening of the St. Lawrence canals and large lake vessels can go direct to the sea.

At Manchester, N. H., Oct. 25, fire broke out in the flouring mills of Charles H. Hill & Co. The fire originated in the roof and burned downward. There were 1,400 bushels oats, 600 bushels corn, 1,000 barrels of flour, 175 casks of cement, 90 casks of plaster, 150 casks of lime, 33 tons of bran, 19 tons of middlings and 100 bags of meal in the building, and of this more than one-half was destroyed. The building was entirely gutted. The loss exceeds \$25,000. There was an insurance of \$12,500 on the building and stock in the North British and Mercantile, the Liverpool and London and Globe, the Merchants' of Providence, the London and Provincial, and the New Hampshire insurance companies.

The Pioneer-Press says: The Pillsbury & Hubert Elevator Company put in a vigorous defense against the accusations of a correspondent in respect to the methods employed by them in carrying on the elevator business. If the regulations which they have adopted are carried out by their agents in the spirit of the broad and liberal policy of the elevator company as outlined in this communication, it is difficult to see what just grounds of complaint the farmers doing business with that company can have. Such grievances as arise are due to causes which cannot be corrected by any elevator company, and which must result from the absence of a system of state inspection and uniform grades established by law.

Advices from Indianapolis, October 25, were to the effect that a very small amount of grain is moving under the prevailing rate, and yet it is not improbable that a further advance may take place November 15. In speaking of this matter a railroad man said the cost of hauling freight to New York last year was 1/2 cent per ton per mile. The present grain rate is 23 cents per 100 pounds, or \$4.60 per ton. The distance to New York is 912 miles and the revenue per mile would, therefore, be \$.00504 per ton of grain. The operating expenses this year are probably a trifle less than last and the cost per ton will hardly reach 5 mills. Even in this case the net proceeds are shown to be very light. It is from some such method as this that freight men arrive at the conclusion that another advance in rates would be justifiable.

Mr. Innis Hopkins, agent at St. Louis, of the Mobile and Ohio Railroad, invited a number of his friends last week to the Iron Mountain Depot, to witness the departure of a train of bran for Atlanta, Ga. The train consisted of twenty-five cars, and being the first solid train-load of bran that ever left St. Louis for any point in the Southeast. The cars were hung with flags and decorated with the posters of Gruber Bros., who, with Mr. Hopkins, worked the thing up. A great deal of good feeling existed among the parties interested, and the train went out with flying colors. Mr. Hopkins stated that it was intended that the train should make the trip in less than three days. If this is done, the trip will eclipse that of the Louisville and Nashville, whose train-load of flour recently taken out of that city with so much eclat, made the time in three days.

The Illinois State Entomologist has written to the Secretary of the State Board of Agriculture, saying: "The winter wheat fields of Tazewell, Mason and Fulton counties, and probably of adjacent territory, have lately been devastated by a caterpillar which has been very generally mistaken for the true army worm; but which is, in all probability the 'grass worm,' or 'falk-army worm,' since it agrees with published figures and descriptions of that insect in every particular, except that the average colors are decidedly darker in the examples I have seen. The damage already inflicted is very considerable, many hundreds of acres of winter wheat having been completely devoured in these counties, and subsequently resowed; but the loss impending is probably much more serious, since another brood of the caterpillars is likely soon to appear, making its attack upon the wheat at a period too late for replanting. It is decidedly important, consequently, to the success of the wheat crop throughout Central Illinois, that the attention of farmers be called to this insect, in order that they may watch closely for the first appearance of this latest brood, and take prompt measures against it."

The grain shippers and receivers of Milwaukee are greatly exercised over the discovery of what they allege is a serious blow at Milwaukee's grain business. The Chicago and Northwestern, it is said, has issued orders to agents along the whole line of the Winona and St. Peter to receive no shipments for Milwaukee. Commission men of Milwaukee are receiving letters like the following, which came from a responsible grain dealing firm of Rochester: "We have received orders along the whole line of this road to stop shipping to Milwaukee on account of a grain blockade. We are at a loss to understand how you are blockaded with the amount you are receiving, and only a

little over one million bushels in stock. Is it a blockade or a put up job? Let us know the facts." The receipt of these letters has caused great excitement among railroad men and grain shippers. Officials of the Northwestern road deny that any such order as stated had been issued. They say that orders were issued to western agents not to receive any grain for "side track delivery" at Milwaukee. That is all. The trouble seems to be that much wheat has been shipped of so poor a quality that the elevators will not take it, and it has to be left in cars, thereby using cars and filling up yard room.

ANNOUNCEMENT.

THE WESTINGHOUSE ENGINE has been before the public for three years, during which time the sales have increased until it is now necessary to provide for a manufacturing capacity of 100 engines, aggregating 3,500 horse power per month, or four engines per working day. This demand, unexampled in the history of the steam engine, has reached a point at which it becomes imperative for us to consider to what it leads; it being manifest that the full development of our market is by no means realized. A considerable proportion of our capital and working force has, up to this time, been absorbed in our selling department, with the gratifying results above noted. We believe the situation now favorable to the determination of a new line of policy, on which we are therefore reorganizing our business, and of which the following is in outline:

THE WESTINGHOUSE MACHINE COMPANY, as such, will no longer solicit sales direct from the customer. The capital and energies heretofore employed in this direction will now be called in, and concentrated strictly upon the manufacture. The selling department will be transferred to a few parties of high responsibility, operating in defined territories, under close contracts, of a nature to reciprocally guarantee the perfection of the engine, and the placing of our total product for cash. The effect of this arrangement is to practically double our working capacity, enabling us to secure a larger stock of engines for immediate shipment, reducing the cost, and, by consequence, the price of the engine, and giving to the purchaser the advantage of counsel with an expert salesman, in place of a mechanically experienced commission agent. Contracts have, therefore, already been executed with the following representative concerns, whose commercial standing becomes an assurance of the relation which they and ourselves will sustain to the customer: Messrs. Fairbanks, Morse & Co., of Chicago, in connection with Fairbanks & Co., of St. Louis, control our product for the western states and territories; Messrs. Parke & Lacy, of San Francisco, Portland and Salt Lake City, for the Pacific Slope, and Messrs. Imray, Hirsch & Kaepfel, of Sydney and Melbourne, for Australia and Oceania.

The immediate purpose of this circular is to announce the transfer of the trade heretofore controlled by our branch office, at 94 Liberty street, New York, to Messrs. WESTINGHOUSE, CHURCH, KERR & CO., whose principal offices are opened at 17 CORTLAND STREET, NEW YORK. This firm is composed of gentlemen who will be recognized as officers of, or otherwise connected with the parent company, but in this capacity operating as a distinct organization, with an independent capital. Mr. H. H. Westinghouse, while residing in New York, will still retain the presidency of the Westinghouse Machine Company, and will personally supervise the character of its product. We take this fitting occasion to express our high appreciation of the efficiency of our New York office, under the management of Messrs. Walter C. Kerr and I. H. Davis. This fact is best evidenced by their association in the succeeding firm. Each member of the new organization will carry into it an established reputation as an engineer and business man, and will devote thereto his personal time and services. Under these circumstances we assure to them a commanding position in the confidence of manufacturers; and to the public, a responsibility, both technical and financial, second to no firm of a like character.

Respectfully yours,
THE WESTINGHOUSE MACHINE CO.
Pittsburgh, October 20, 1884.

A CARD.

The members of the firm whose signature is appended have associated to occupy a field, which, though broad and important, is not as yet covered by any similar organization. The scope of our business is best explained in a word, "CONTRACTING AND CONSULTING MECHANICAL ENGINEERS, CONTROLLING THE MANUFACTURE OF SALE OF APPROVED SPECIALTIES." To interpret: Engineers first and always, we assure to our clients the best knowledge and experience we have to give in everything relating to the generation, transmission and application of power, at all times without bias from other interests. This last point we desire to make very prominent. As contracting engineers, we design, estimate for, purchase, and supply first-class machinery only, for all purposes within the legitimate range of our practice, having always in view our relation to the client as his consulting engineers. We reserve the right to reject any contract based upon engineering which, in our judgment, is unsound. As contractors and business men, we deem it policy to secure control of such specialties of extraordinary merit as may be, from time, approved by us, and to develop the general market therefor, outside of our personal and professional practice. We emphasize the statement, that no specialty will appear on our list which will not carry with it the seal of our best judgment, based, not upon opinion, but upon actual test, rigidly conducted in our own interest. We recognize the fact that no article, however meritorious, is applicable in all situations. Hence, when the interests of the customers are best served by some appliance outside of our immediate control, we invariably recommend it, and supply it if desired. While our business is founded upon the Westinghouse Automatic Engine, which offers a wider range of application than any other, this engine is not at present built above 800-horse power. We, therefore, contract for heavy plants from 800-horse power upwards, using such other standard automatic engines as may be best adapted to each case. This branch of our practice receives special attention.

Boilers, boiler settings, pumps, condensers and steam apparatuses generally, and in this department our experience should be especially valuable. Prices are competitive as far as consistent with merit. Announcement of other specialties, now under investigation, will be made as determined upon. Particular attention is given to the designing of new applications of power, in which direction our success has heretofore been marked. We have in our employ a force of expert salesmen, and the personal services of the principals are at all times the property of the customer. No charge is made for such services, except in the case of pre-arranged retainers as purely consulting engineers. The above statement of the advantages at our command, is our bid for the confidence of the manufacturing public.

Very respectfully,
Westinghouse, Church, Kerr & Co.

H. H. WESTINGHOUSE,
WM. LEE CHURCH,
WALTER C. KERR,
I. H. DAVIS.



Toledo Mill Picks and Stone Tool Mfg. Co.

Manufacturer and Dresser of

Mill Picks.

Made of the very best double-refined English cast steel. All work guaranteed. For terms and warranty, address GEO. W. HEATLEY, No. 297 St. Clair Street, Toledo, O. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF

SHAFTING, PULLEYS, HANGERS, COUPLING AND MACHINE JOBBING.

THE BOSS ELEVATOR CUP

is gaining favor every day. Over 13,000 sold in one day in three different States. My capacity in my new shops is 6,000 per week. I carry 20,000 cups in stock and can take care of any size order. W. P. MYER, 19 and 21 E. South St. INDIANAPOLIS, IND.



IMPROVED BY TWO YEAR CONSTANT USE

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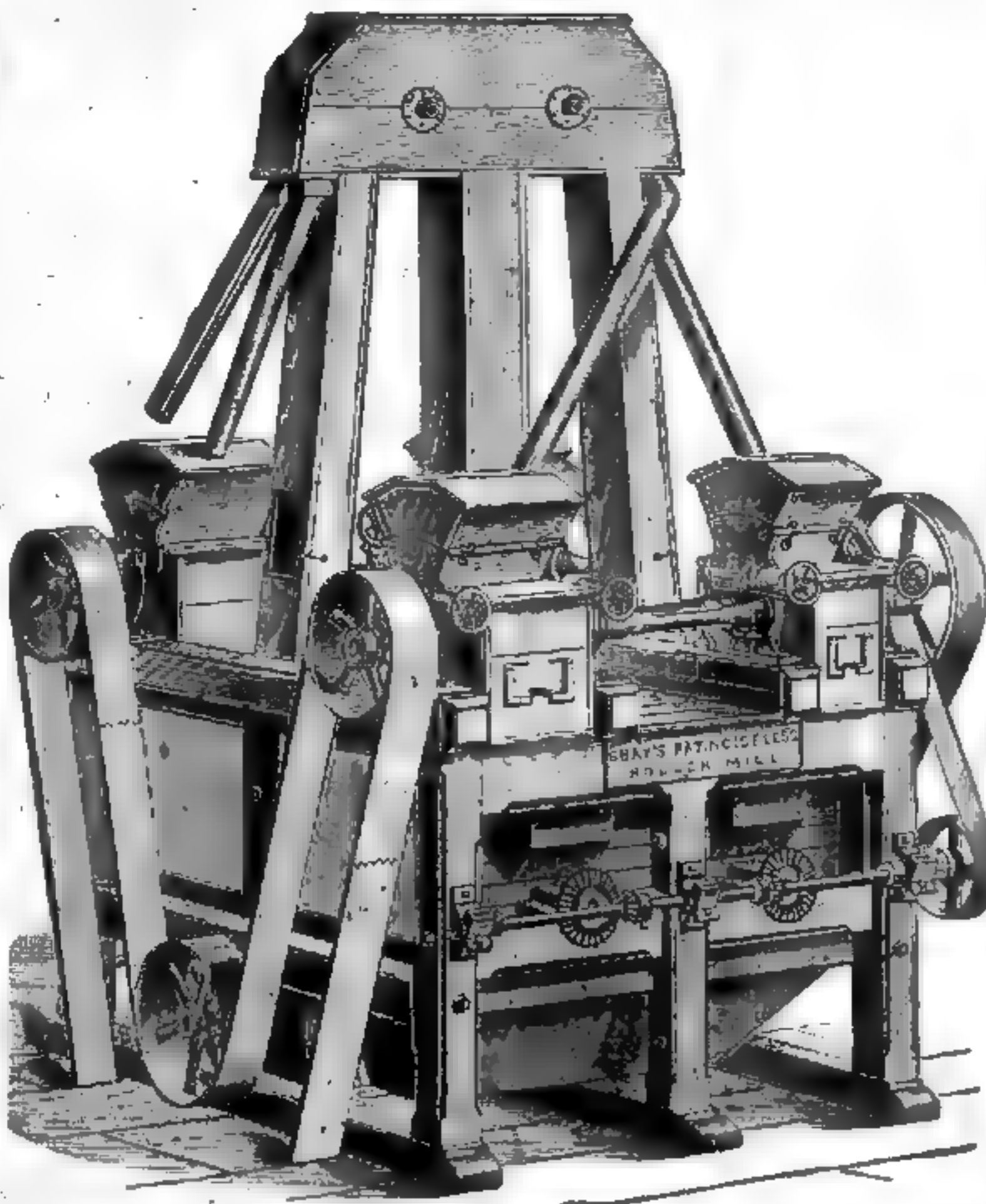
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FOR SMALL MILLS

*Economizes Room,
Takes Less Power,
Saves Millwright Labor.*

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RELIANCE WORKS,
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**MUNSON BROS. FOR ENGINES & BOILERS**

MANUFACTURERS OF

Munson's Celebrated Portable Mills, FOR WHEAT, BUCKLE, CORN, FEED, Etc.

Millstones, Hangings, Bolting Chests, Shafting, Gearing, Pulleys, Hangers, Etc.

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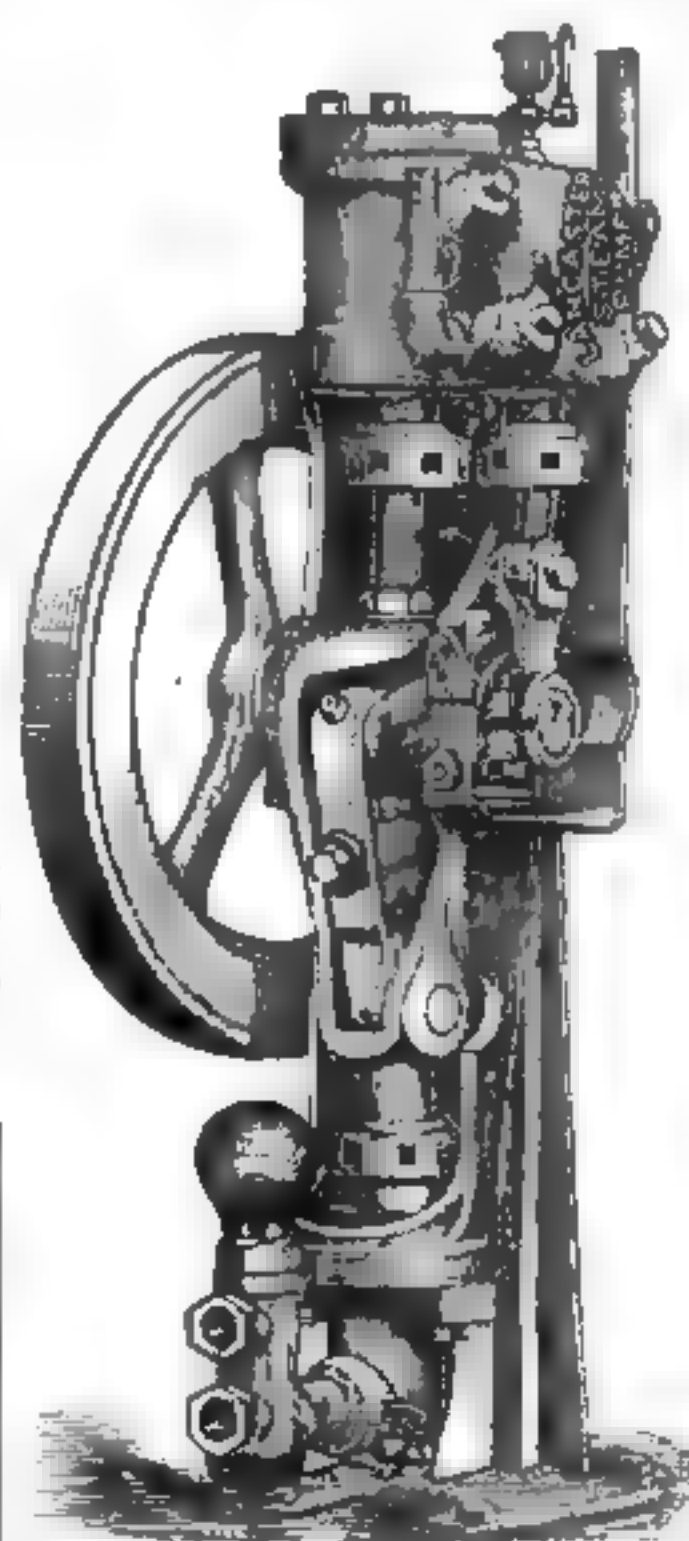
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*One to 30 Horse Power,
PRICE, FROM \$125 UPWARDS.*

Steam Pumps, - \$35 and up.

Eclipse Tire Benders, 15 " "

Fan Blowers, - - 18 " "

Tuyere Irons, - - - \$2.50.

THE BEST IN THE MARKET!

For Circulars, Etc., Address,

THE LANCASTER STEAM PUMP CO.
AND MACHINE WORKS,

EZRA F. LANDIS, PROPRIETOR, LANCASTER, PENN.**C. N. SMITH'S CENTRIFUGAL REEL**

IS BEYOND QUESTION THE

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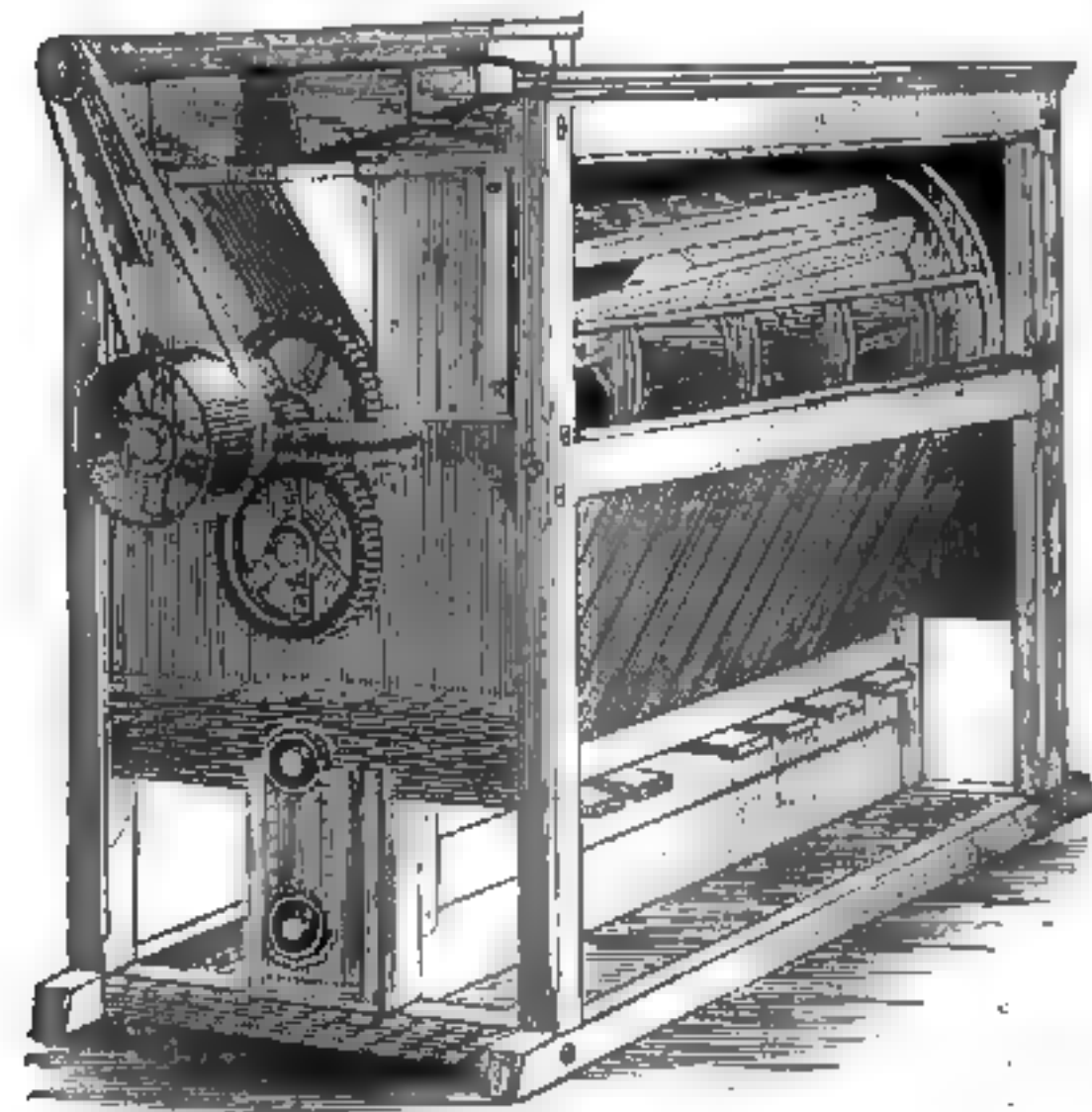
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THE LEAST MONEY

While the operation of every Machine is

FULLY GUARANTEED.

*Send for Prices, Lists of
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**READ THIS LETTER. THEY WILL DO AS WELL FOR YOU.**

Mr. C. N. SMITH.

We have been running the two Centrifugals since February, the first without any stop whatever, and are well pleased with them. We throw less stock on our Rolls, and make four to five per cent. less Low Grade than before we had the Machine. You can refer any one to us and we will be pleased to give it a good send off. Wishing you success, we remain, Yours respectfully, CHAS. S. DURST, Supt.

CHAS. SHURY, Head Miller.

OFFICE OF LUDLOW MILLS, DAYTON, Ohio, April 23, 1884.

MANUFACTURED ONLY BY

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THE BEST AND CHEAPEST COB CRUSHER

IN THE WORLD.

Steel Being Used in its Construction.

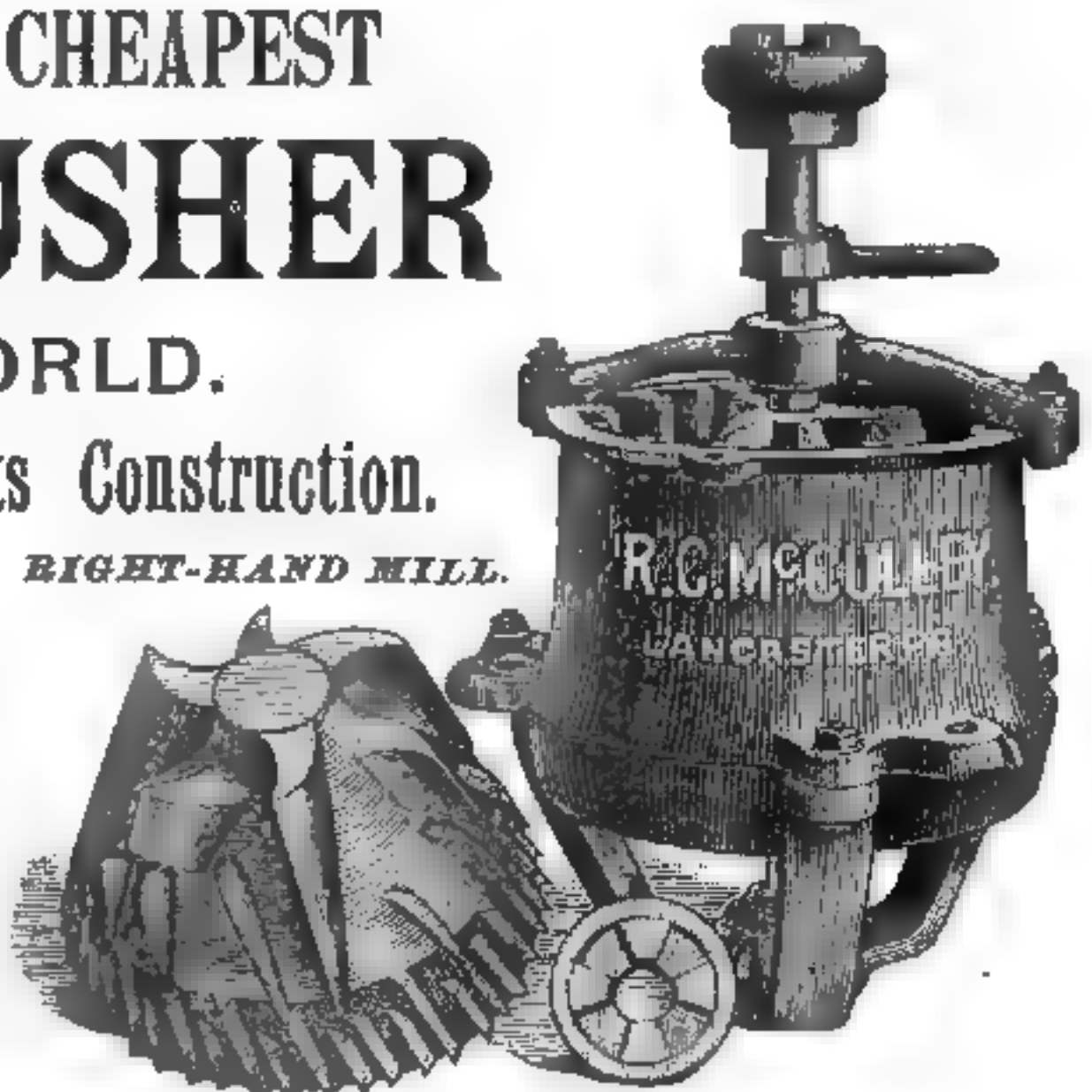
PRICE, 30.00.

RIGHT-HAND MILL.

CAPACITY 75 BUSH. PER HOUR.

Thousands of these Crushers are now in use, and giving entire satisfaction.

Please Send for Circulars.

R. C. McCULLEY, LANCASTER, PENN.



THE CORN LAWS IN FRANCE.

THE proposal now before the French Corps Legislatif for the imposition of a duty of 27 cents a bushel on imported wheat, the well-known plans of the German Government for increasing the duty on imported rye to four times what it is now, the agitation in England for "fair trade," restrictions already imposed in one way and another on the importation of American hog products into Germany and France on the pretense of health, but really for the protection of land-owners, are all evidences of a reactionary movement against this country in the markets abroad for its food products. Our dispatches from Paris make it apparent that the scheme for the imposition of a tax on our wheat is to be pushed. An amendment to the existing laws was offered recently fixing the tax at 5 francs for each 100 kilograms, and, when the German Reichstag, which is to be elected at the end of the month, meets, the Government intends to call on it to quadruple the duty on rye. The very heavy tax on our exports of wheat to France has cast its shadows before on our wheat market. That it will have a tendency to lessen the demand for our surplus is a matter of course, for it will make wheat dearer in France. It will encourage the French farmer to grow more wheat, as the exclusion of our hog products has stimulated the production of hogs. There is a good margin for the French Government to work on, for France does not raise all the wheat it needs. The French farmer can expand his wheat fields considerably if the Government stands ready to tax the consumers enough to meet his losses. The total value of our exports of wheat and flour to France in the year ending June 30, 1883, was \$17,500,000. But no matter how high a duty be put on it cannot prevent the sale to France this year of a large proportion of our usual exports, for the deficiency of her fields must be supplied. And if in later years France makes more wheat for herself at a loss and buys less of us, other nations may buy more. Our own farmers, moreover, will be apt to raise less and protect themselves. The raising of the German duty on rye from half a mark per 100 pounds to two marks is a measure that will certainly hurt us less than the German people themselves. The effect will be to increase the price of rye, which is exclusively used as an article of human food, at least 30 per cent. The bad effects on the people may be guessed at from the calculation made by a Berlin correspondent that the six great land-owners in Prussia will gain not less than \$2,000,000 from the enhanced cost of rye to consumers. Our exports of rye and rye flour to Germany in the fiscal year 1883 were but \$436,400. A sufficient commentary on the cruelty of the proposed tax on wheat is contained in the little item of news which came from Paris the same day that the appropriations of the city for the coming year have been 3,500,000 francs for the relief of the increasing destitution of the poor. Dearer wheat in France means just so many more deaths from starvation in the cities. The wheat tax is a country project. It is opposed by the cities, which are eaters of wheat, not producers of it. The peasants who are fairly well off can live without it. If they succeed in securing it they will have aimed a blow at our farmers which will be very likely to bring forth retaliation in the shape of heavy duties on the importation of their wines, for a large part of which we can find a very good substitute in California. We can buy our wines for ourselves direct from California more advantageously

than to buy them from the French, who buy them from California and doctor them up for sale.—Ex.

ITALIAN MILLERS.

A correspondent to the "Miller" writes: "The meeting of Italian millers that was lately held in Turin proved an unqualified success, and may be expected to bear good fruit in the future by promoting a feeling of solidarity among the millers, and enabling them to form some notion of the importance of their industry. The meeting was attended by upwards of a hundred representatives of influential firms, and after Signor Gasca, of the firm of the Signori Grattoni & Co., of Turin (to whose good offices the meeting was greatly due), had been voted into the chair, the following subjects were discussed by the assembly:—1. That steps be taken for the general reduction of the railway tariffs, and especially for the provision of free carriage of empty sacks on return, and of special trucks for the sole transport of grain. 2. The advisability of organizing an opposition to the proposed increase of the duty on foreign wheat. 3. The necessity for a mutual compact binding millers not to deliver flour at a longer term than three months. 4. The institution of schools for operative millers. 5. The constitution of a millers' society for the advancement and protection of the trade. 6. The organization of a petition to the Government praying that in future flour contracts shall be substituted for the existing wheat contracts in the army supply department. 7. The admission by courts of justice of millers as experts in questions affecting the milling trade. 8. The unification, as far as possible, of flour weights and brands. The objects proposed under headings 1, 2, 4, 5, 6, and 7 were approved by the congress, and a committee was appointed to draw up the necessary petitions to the State, and to prepare the basis of a millers' association as proposed by the agenda 5. Questions 3 and 8 were referred for discussion by a future congress. The proceedings throughout were marked by the very best feeling, and the thoroughly practical spirit in which the questions at issue were discussed augured well for the National Association of Italian Millers that is likely to arise out of the Turin Congress."

NOTES.

It is stated that the Italian millers intend to establish a technical school for milling.

English farmers complain that their wheat crops will not pay the wages of the harvesters, to say nothing of rent. They cry for a return of the protective tariff.

In the early part of October a Chicago agent exhibited at the Vienna exchange samples of American flour equal in appearance to that produced by the Hungarian mills, and which can be sold at the same prices. Of course, says the *Mueller Zeitung*, the mere appearance does not enable us to conclude about the quantity of gluten in the flour, but it is a very significant fact to know that the American competition has penetrated to the very center of the European flour production.

There are in France 4,575 miles of navigable rivers, as against 4,190 miles in 1852, and there are also 2,900 miles of canals, as against 2,440 miles in 1852. This shows an increase in rivers of 385 miles and in canals an increase of 460 miles. But the increases were enormously expensive. Between 1852 and 1878 the outlay for them was nearly \$70,000,000, and since 1878 it has been about \$55,000,000 additional. Meanwhile the quantity of freight carried by water has increased only 4,000,000 tons.

DeLOACH WATER WHEELS.



Simplest and Cheapest Manufactured, and have received the unqualified endorsement of all who have used them. Every small Mill can afford one. Send for large illustrated Catalogue of Wheels and general Mill supplies. "The Star Grit" Millstones from our quarries are unsurpassed and sell remarkably low. A. A. DeLoach & Bro., Atlanta, Ga., U. S. A.

THE CASE MACHINERY

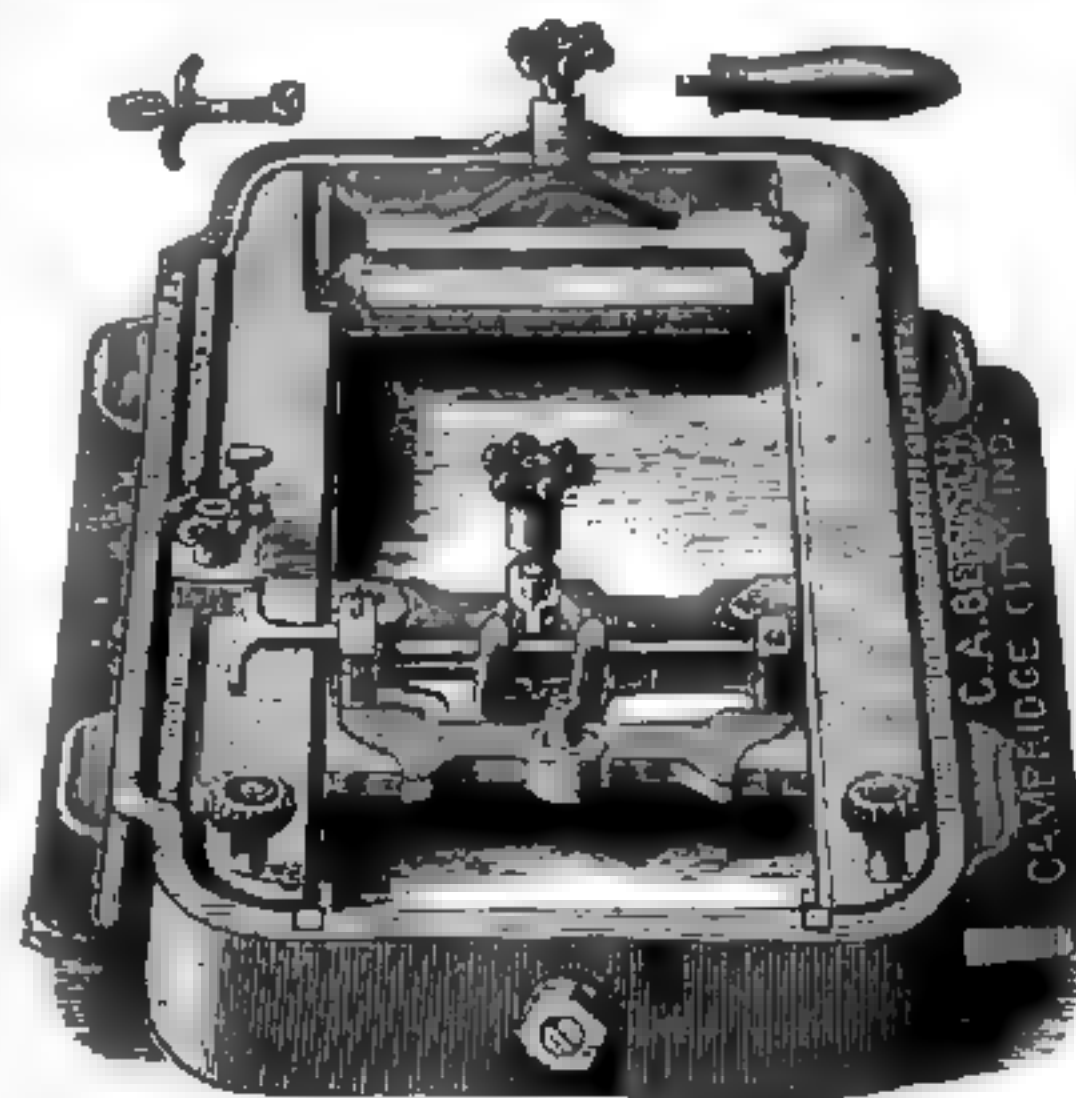
Is the most complete line of gradual reduction machinery made. Each machine is adapted to the others. A great saving in expense and convenience to millers. Our patterns for Mill Irons, Gear Wheels, Pulleys, &c., Elevator Heads and Feet, and all such are very complete and of the latest styles. If you want a single pair of Rolls, Purifiers, Centrifugal Reel, Bolting Chest, Pulley or Shaft, or a full gradual Reduction Mill,

WRITE US

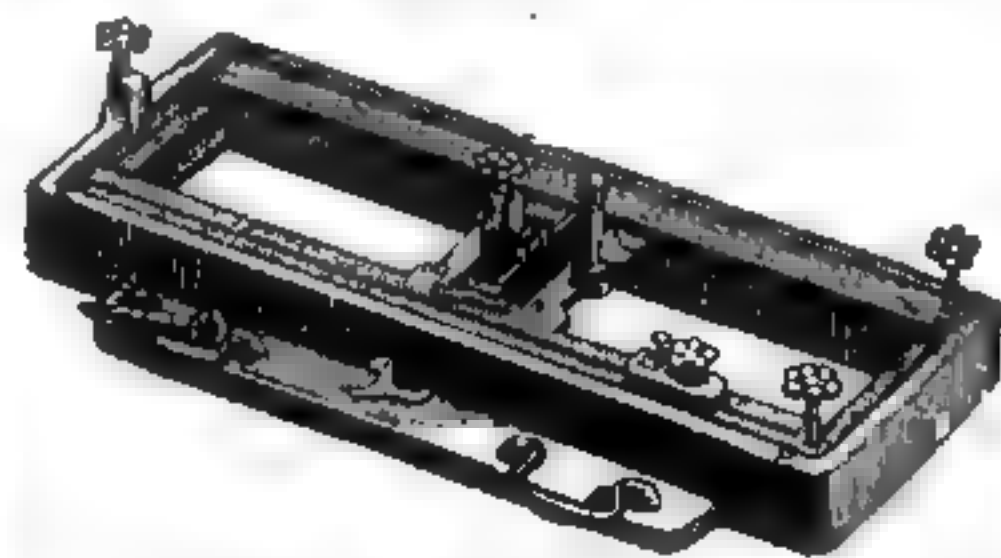
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TEETOR'S QUICK ADJUSTABLE DIAMOND DRESSER.



The A Machine. 29 inches long, 18 inches wide. Weight, 140 pounds. Same width carriage as the B machine.

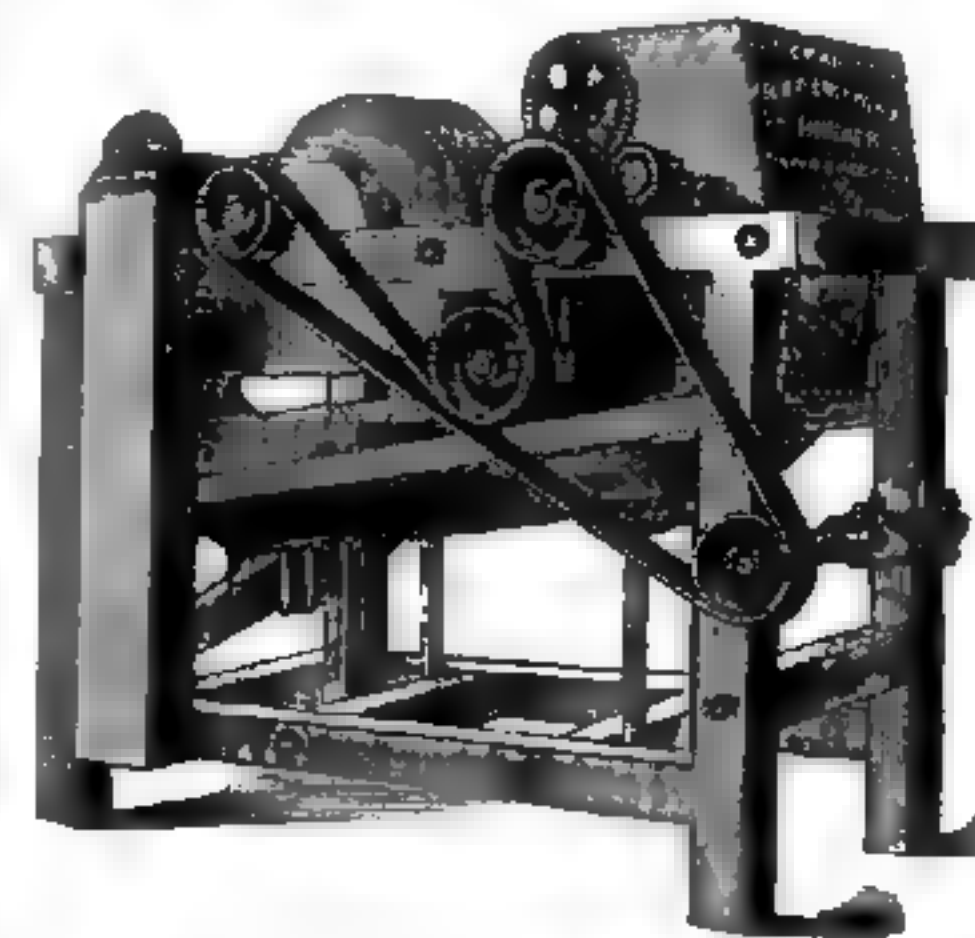


The B Machine. 33 inches long, 19 inches wide. Weight, 165 pounds.

Automatic rod feed. A Revolution. Will cut over 1,000 cuts per inch, right or left, with one or two diamonds for facing. The only Practical feed, especially for deep facing, once going over. No tools required; will Warrant Better Satisfaction, and More Work of all kinds can be done with less trouble than with others. The best of references given. Mechanics are much surprised as to their merit, and say it is "A Revolution." There has never yet been a call for repairs for any one machine. Have been in operation for over four years. Also a Perfect Diamond Holder. See a Machine shown by Theo. Bradford & Co., Exposition, Cincinnati, Ohio. Full descriptive circulars forwarded. Mention this paper.

C. A. BERTSCH, MANUFR., CAMBRIDGE CITY, IND.

BUCKWHEAT MILLERS



WILL FIND IT TO THEIR DECIDED ADVANTAGE TO INVESTIGATE THE CONCEDED MERITS OF

CRANSON'S SILVER CREEK ROLLER BUCKWHEAT SHUCKER

ITS SUCCESS IS BEYOND QUESTION. ITS VALUE HAS BEEN DEMONSTRATED IN MORE THAN 800 CASES. IT IS THE ONLY PERFECT BUCKWHEAT SHUCKER IN THE WORLD.

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JONATHAN MILLS UNIVERSAL FLOUR DRESSER.

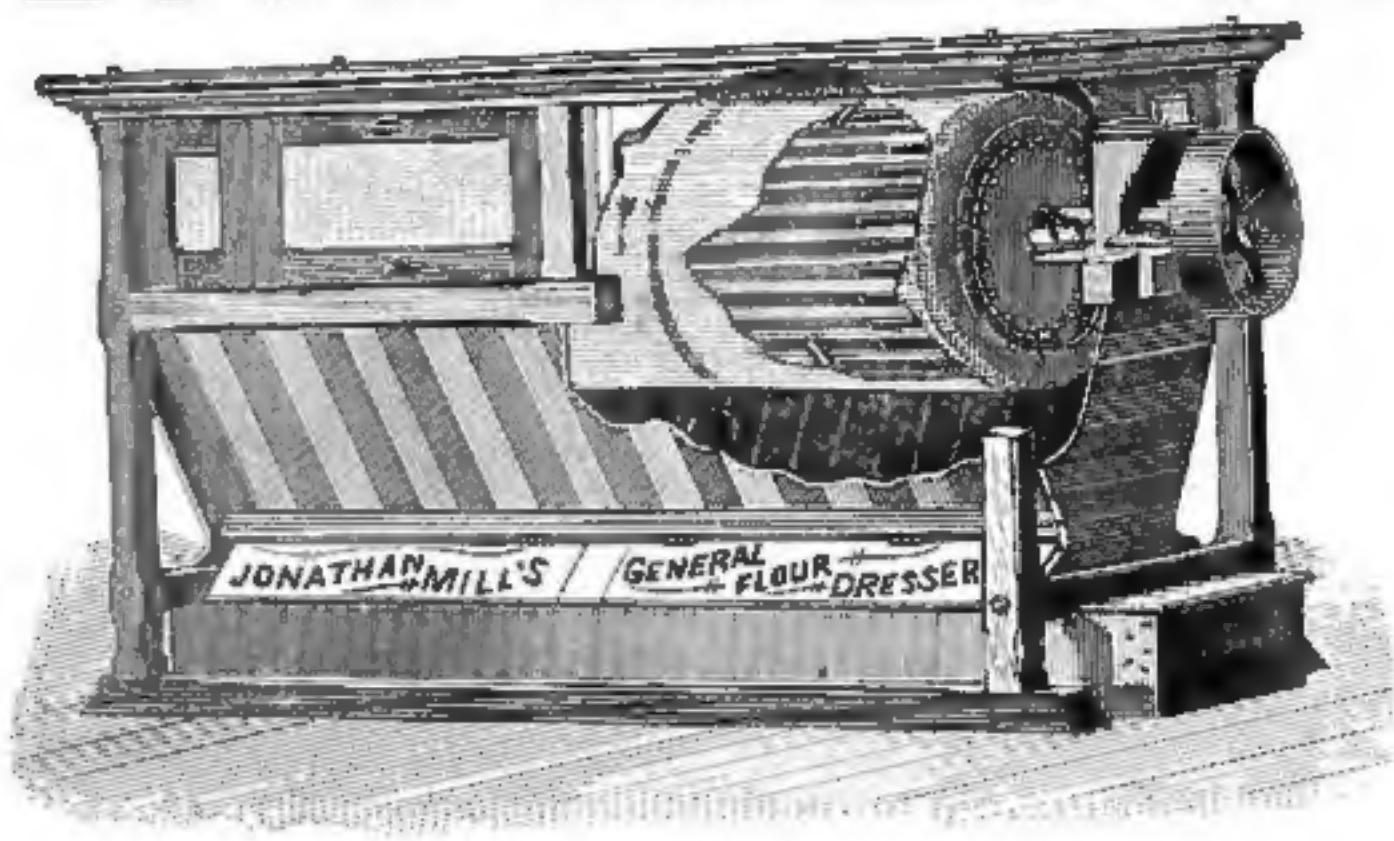
Guaranteed to be superior to any other bolting device for clear, clean bolting or rebolting of all grades of Flour.

FINELY DESIGNED AND MECHANICALLY CONSTRUCTED.

SLOW SPEED. OCCUPIES SMALL SPACE, AND HAS IMMENSE CAPACITY.

For Price List, Sizes, and Dimensions, Send to
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Send also for 150 Page Catalogue Describing their Engine



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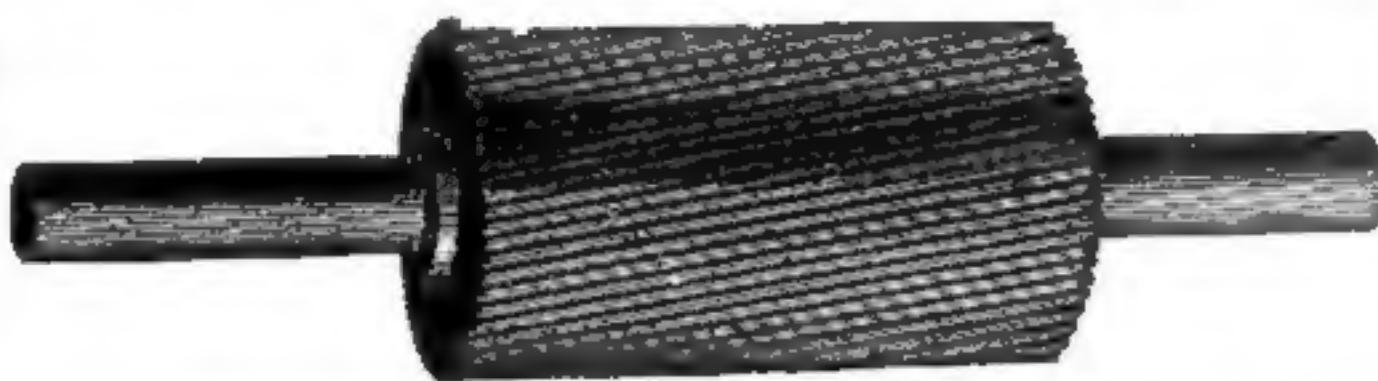
Manufacture a Complete Line of

FLOUR MILL MACHINERY.

Including Portable Corn and Middlings Mills.

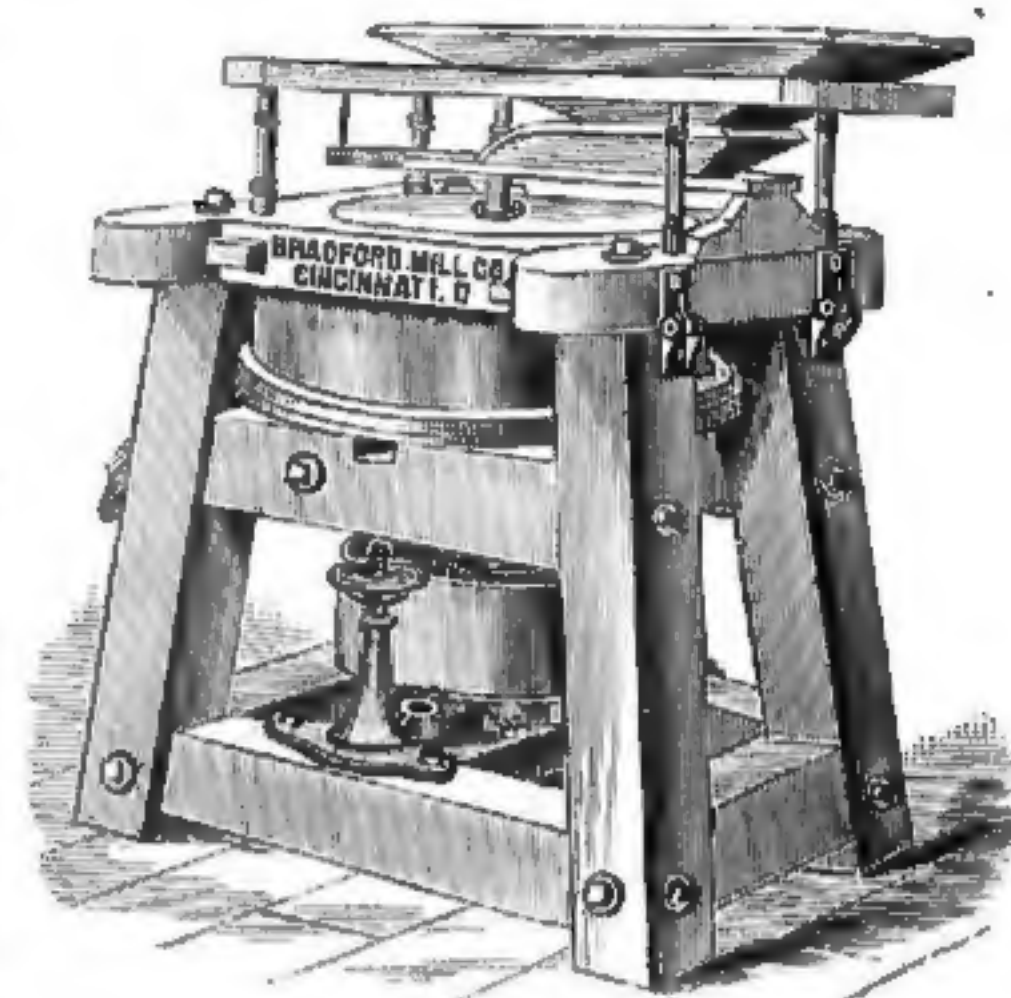
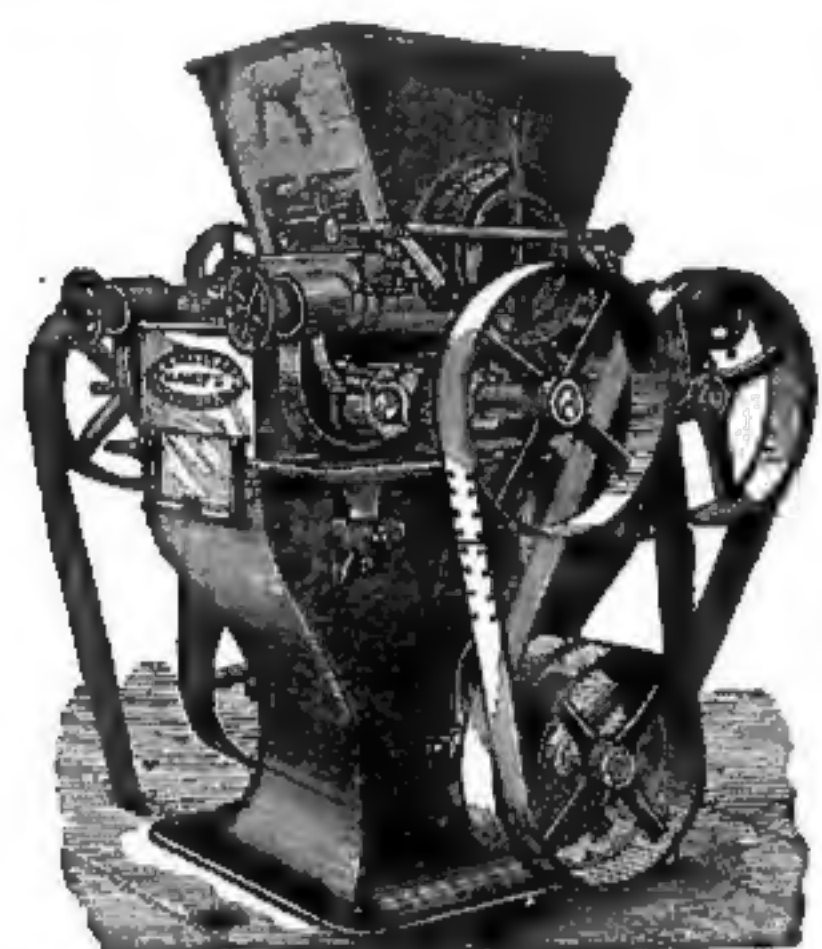
RE-GRINDING AND RE-CORRUGATING

**PORCELAIN
ROLLS
RE-GROUND.**

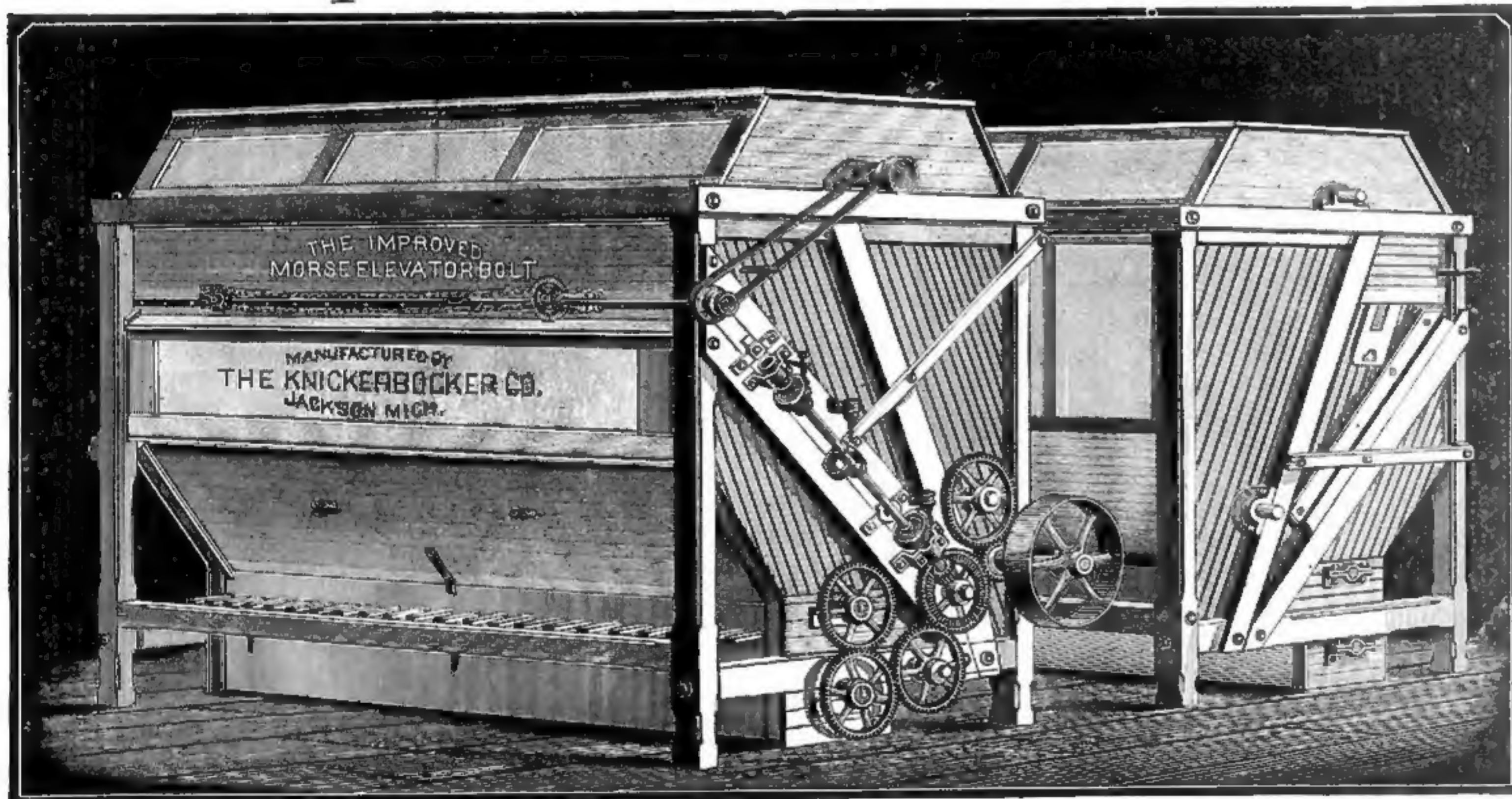


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ROLLS
Re-Ground and
Re-Corrugated.**

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The Improved Morse Elevator Bolt.

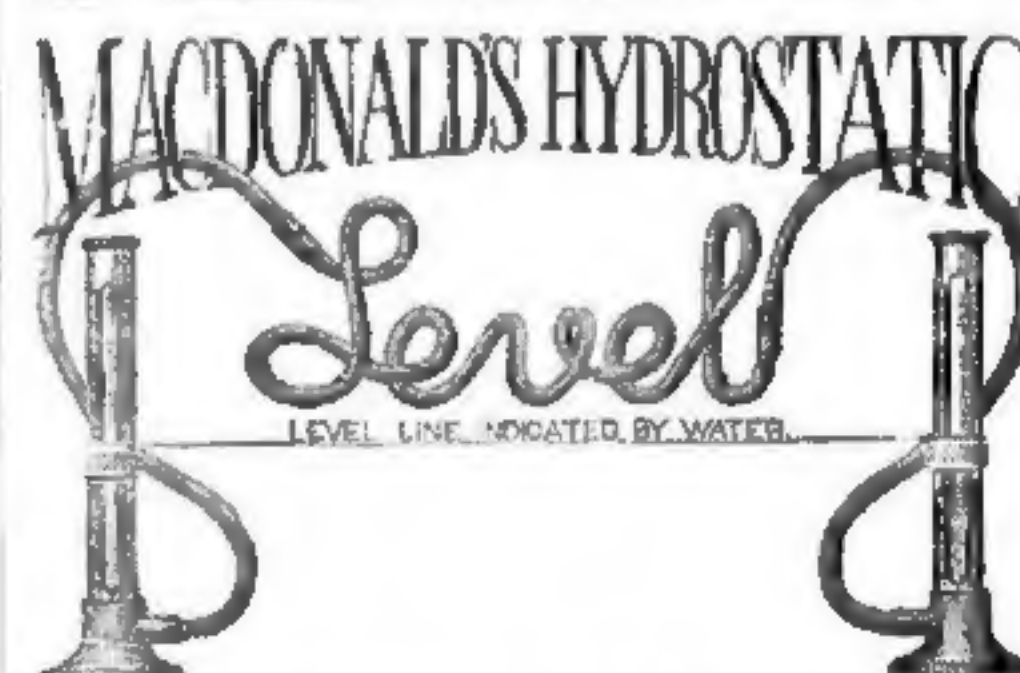


DEMONSTRATED IN OVER 100 MILLS TO BE THE BEST BOLTING DEVICE KNOWN.

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A tool for Cutting, Leveling and Polishing the Furrows and Face of Millstones.
Eight inches long, 2 1/2 inches wide, 1 1/2 inches thick. Received the highest and only Award given to Polishers at the Millers' Exhibition, Cincinnati, Ohio, June, 1880.
For facing down high places on the buhr, this tool has no equal, and can be done much better and in one-sixth the time than with the mill pick. It is much larger, cuts better, can be used on either face or furrow, can be used until the corundum is entirely worn out on one side and then turned on the other side. Has over four times the amount of corundum and when the corundum is worn out can be replaced in the handle at a small cost. Sent by express, \$3.50. Satisfaction guaranteed, or money refunded. Address
HORACE DEAL, Bucyrus, Ohio



For leveling shafting it is invaluable. Applied to any two points regardless of distance and obstructions that may be between. Send for circular.

Jas. Macdonald, 55 Broadway, New York.

CAREY'S DOUBLE ANCHOR BOLTING CLOTH

Best in the Market. Every Yard Guaranteed Always up to Standard Count.



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SOLID COTTON BELTING. MILL PICKS.

FINE FRENCH BURR & ESOPUS MILLSTONES

**BELTING,
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ELEVATOR BUCKETS,

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MILL FURNISHINGS GENERALLY.**
Send for Catalogue and Price List.

SAMUEL CAREY, 17 Broadway, NEW YORK.

HAS BEEN AWARDED
FIRST AND ONLY PREMIUM
 AT THE
 Millers' International Exhibition.



Office of THE MILLING WORLD.
 Buffalo, N. Y., Oct. 29, 1884.

In a feeble way, says the *Commercial Bulletin* of this morning, prices have zigzagged under the direction of the Chicago pendulations, but there seemed to be an entire absence of the venture-some spirit necessary to vitalize the speculative market; there was a flavor of flatness and staleness and unprofitableness about the grain "pit" that palled on the taste of the average "scalper" and sent him away nauseated and disconsolate. As for "Outside" business there was none. Much of the time the speculative arena has been entirely deserted; the footings of the "option" transactions are very meagre and represent little or nothing beyond the chance taking of the "local element" in the hope of securing a point or two of advantage. The Chicago market was weakened on reports that the New York visible supply calculations would show to-morrow an increase of 3,000,000 bushels wheat. Mr. Walker, however, says the increase will probably be 2,000,000 bushels. The Chicago calculations out to-day make the visible supply 34,167,907 bushels wheat, 5,616,130 bushels corn, 3,835,309 bushels oats, 654,316 bushels rye and 1,652,804 bushels barley. The previous Chicago prognostications had settled upon 3,000,000 bushels in the visible supply of wheat; their official exhibit of 1,500,000 increase caused the temporary reaction in the market.

The "cash market" has changed but little to-day as to price; there has been less doing. No. 2 red has been held too firmly for much business. The cable advices have indicated fairly sustained stability abroad. The supply of freight room (ocean) is still a drawback to exporters. There is some talk of "firmer cables," but the conduct of exporters fails to carry out the idea. The whole market for cash wheat is generally featureless.

Later reports indicate that the Chicago visible supply calculations did not include the amount of wheat on canal. According to these reports, if this wheat was included the supply would show an increase of 3,000,000 bushels. It is unreasonable to suppose that there was any such important omission. There have been received, however, numerous dispatches which say that "the canal wheat has been left out." To-morrow's New York statement is looked forward to with unusual interest.

The weather has been against business in flour; all the trade brands are selling slowly. The low grades, however, go as fast as they come; that is not very fast; arrivals of the low grades, actual and prospective, are likely to be small enough to prevent any easiness in the market for some time to come, while mediums and higher qualities are freely offered and less wanted; no concessions, however—an easy market for grades worth \$4.00 and over; a fair market for the lower qualities. Rye flour is quiet and steady; offerings and demand alike moderate. Buckwheat flour dull, heavy and nominal. Corn goods of all descriptions wanting buyers at former prices; business slow. Bag meal closes dull and heavy. Mill feed in moderate demand, in fair supply and closes barely steady.

BUFFALO MARKETS.

FLOUR—City ground clear Northern Pacific spring \$4.75@5.25; straight Northern Pacific spring, \$5.25@5.75; amber, \$5.25@5.85; white winter, \$5.00@5.50; new process, \$6.25@6.75; Graham flour, \$4.25@5.25. Western straight Minnesota bakers, \$5.00@5.25; clear do, \$4.75@5.25; white winter, \$5.00@5.25; new process, \$6.25@6.75; low grade flour, \$3.50@4.00. **OATMEAL**—Ingersol \$5.75; Bannerman's \$6.00; Akron \$6.25. **CORNMEAL**—Coarse, \$1.15; fine, \$1.25 per cwt. **RYE FLOUR**—In fair demand \$4.00@4.25. **WHEAT**—Firm Sales, 26,000 bu No. 1 hard Northern Pacific at 81c, 25,000 bu. No. 2 do. to arrive at 76c, 16,000 bu. No. 1 Northern to arrive at 86c, and 8,000 bu. do. seller Nov. at 78c. Winter wheat quiet; No. 1 red nominal at 84c. No. 2 do. at 82½c, and No. 1 white at 81c. **CORN**—Steady; sales 7,500 bu. No. 2 in car lots at 50c, 3,500 bu. No. 3 at 46½c, and three car loads do. at 47c, on track. **OATS**—Dull. Mixed Western nominal at 29@30c. Last sales of No. 2 were made at 32c; new State from wagons 32@34c. **BARLEY**—Firm, Sales six car-loads No. 2 State at 87c, three do. six-rowed do. at 88c, and 3,500 bu. do. at 86c, on track. **RYE**—No. 1 Western 58½c; State quotable at 52@53c.

FOREIGN EXCHANGE.

The market for sterling was quiet, but fairly steady at present low prices. Nominal rates of demand were higher, in consequence of expected

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advance in the Bank of England rate to 4 per cent though this is regarded as likely to prove only temporary check to gold shipments. Posted rates closed at 4.81½ for sixty days' and 4.84½ for demand. The actual rates ranged: At sixty days' sight, 4.80½@4.80½; demand, 4.83½@4.84; cables, 4.84½@4.84½, and commercial, 4.78@4.78½. Continental exchange dull; francs 5.24½@5.21½; reichsmarks, 94½@94½ and 94½@95; guilders, 39½ and 40½. The closing posted rates were as follows:

	60 days.	90 days.
London.....	4 81	4 84½
Paris francs.....	5 22½	5 20
Geneva.....	5 21½	5 19½
Berlin, reichsmarks.....	94½	95½
Amsterdam, guilders.....	40	40½

WHAT HE THINKS OF IT.

Mr. Denison B. Smith, of Toledo, is apparently of the opinion that wheat values are much too low, and will ere long advance. He writes to the *New York Commercial Bulletin* as follows: In your issue of October 23d, you print an extract of a private letter from a "merchant of high standing in Chicago," giving his personal convictions respecting the sources of the wheat market since harvest, and which you say are "entitled to consideration." With great respect I desire to say that your opinion of the extract, expressed in the last sentence quoted, must be erroneous, and that the letter itself is full of inaccuracies, and very misleading and unreliable. Your extract says:

"I see *Bradstreet* and some other authorities have been holding up the fact that more wheat has been received at the central receiving points within the nine weeks that have elapsed since harvest than was ever known before. [The points referred to are Duluth, St. Paul, Milwaukee, Chicago, St. Louis, Toledo, Detroit and Cleveland.] From this the opinion is formed that the farmers are selling, notwithstanding the low prices. It is not so, and the large receipts are not new wheat at all."

The letter writer sets forth that in May a buying syndicate was formed. The wheat in farmers' hands was "swept up" and the wheat was stored in elevators at country stations. He says:

"But the wheat was not allowed to move towards the central receiving points. The panic came. * * * After awhile (in July), an effort was made to get the price up, and it did go up to near 90c. on account of apparent scarcity, but every time a bushel or two was dumped down went the price. Then came the harvest of our enormous crop, and the grain was forced out of the bins towards the markets. This is the story of the large receipts of wheat during the past eight weeks. The poor farmer has very little to do with it."

The statements contained in the above extract are very extraordinary for any dealer to make, and no intelligent man can truthfully make them. The entire letter, as quoted, is full of reckless exaggerations. Let me see if I cannot make this charge clear. So far as the winter wheat section of the great West is concerned, the surplus of producers and the stocks in interior elevators at harvest time, were much more nearly exhausted than for some years. With the exception of Michigan, stocks were depleted much beyond the average of years. This is proved by the interior milling demand, which could not be supplied by the June receipts. A good deal of wheat was sent into the interior from Toledo and St. Louis for milling.

In the eight weeks—July 1st to August 23d—the receipts at Toledo, Detroit, Chicago, Milwaukee, St. Louis, Peoria, Minneapolis and Duluth, were 17,078,000 bushels of wheat. This was nearly all winter wheat. Spring wheat had not then commenced to move freely. It was nearly all new winter wheat. The fact that receipts at any of above points up to and into August, of spring wheat were light, at once disproves also the theory of large accumulations at interior elevators of spring wheat. For example, the receipts at Duluth for the week ending Aug. 25th, were 6,300 bushels; Minneapolis, 291,000 bushels. Last week the former received over 650,000 bushels, and the latter 1,094,000 bushels. The receipts of spring wheat at Chicago and Milwaukee in the eight weeks referred to, were also light. In the sixteen weeks—July 1st to October 18th—the receipts of wheat at the points named have been 50,143,000 bushels; in 1883, 36,843,000 bushels, and in 1882, 40,454,000 bushels. The movement of wheat from farmers' hands since July 1st to October 18th, has never been equaled; and where did it come from if "the poor farmer has had very little to do with it?" Your letter writer is a speculator on the bear side. He belongs to the great army of people who have been busy since harvest in notifying our surplus and depreciating values. The closing

portion of the letter quoted plainly, indicates this. It is as follows:

"Query—If the speculators, with their power of manipulation, have only been able to force wheat to 75@77c, where will the bulk of this 550,000,000 bushel crop come out? My mind is prepared for lower prices yet. There will be many a 'job lot' of it before a year rolls round. We can use 275,000,000 ourselves. To that point we can 'protect' ourselves. The question is, who will 'protect' the surplus? Other countries want it, of course, and knowing our situation, they are going to have it at their price. America will not set the prices for cereals this year."

This 550,000,000 bushel crop, indeed! If we have raised 350,000,000 of winter wheat, about 310,000,000 of it was produced in the Atlantic States. That is an outside estimate. Of this crop, about 50 per cent is No. 3, No. 4, and rejected. It will require three pounds to the bushel to make it equal to bushels of sixty pounds each, or 15,000,000. If we have 500,000,000 bush of good wheat, it is more than I now believe in.

The crop year so far has been unique in some respects. In this country and in England farmers have sold more freely than in other years, at very much lower prices, and it continues to come. Apparently they have had considerable "to do with it."

NOTES.

Whelchel's flour mill, at Baker, Ga., will soon be completed.

L. I. Jennings, Tigerville, S. C., is about to build a grist mill.

W. A. Pritchard, of Brookfield, Ga., is building a mill at that place.

Phillips & Co., of Hyde county, N. C., are building a grist mill.

A LUCKY NUMBER.

"There are things in this world so odd as to appear like miracles," remarked the conductor of a railway train in Ohio. "During my service on the road I've seen some coincidences and things of that kind really wonderful. For instance, one day I had to walk from one station to another on our road. A train was due along there pretty soon, going the other way. Turning this fact over in my mind in a peculiar way, as a man will sometimes, I remarked to myself, as I looked at my watch, that I believed I could walk the distance of twenty-two telegraph poles before I would have to step off to let the train pass. I walked on, counting the poles. I had passed eighteen when I saw the train coming. Quickening my pace, I just made the twenty-second pole when I was compelled to step aside. As I did so I noticed that the locomotive was number twenty-two. Then I reflected that the train was number twenty-two also. Reflecting on this, the fact came into my mind that that was the 22d day of the month, and that I was twenty-two years old at the time. As I started on I looked one side at a mile-post by the side of the track. On it was painted the figures 22. It was that many miles to the end of the line. At the hotel in town that night I was assigned room 22. Naturally I was much impressed by this remarkable series of coincidences. I talked of it to my friends. One of them, a young sport, told me that was my lucky number and advised me to gamble on it. I had never visited a gambling house, but he took me to one. Stopping at a roulette wheel, I played my money on the square numbered 22."

"Did you win?"
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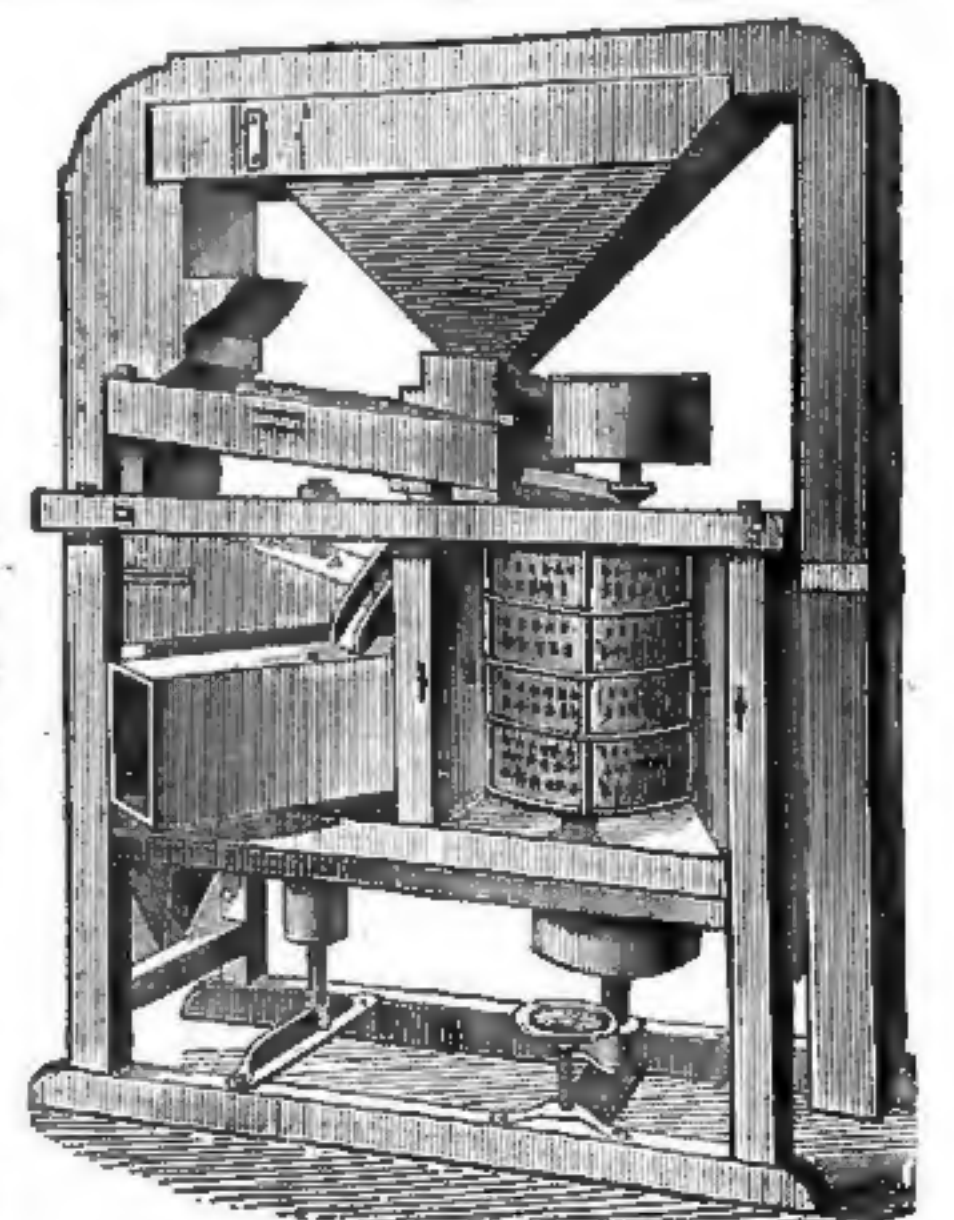
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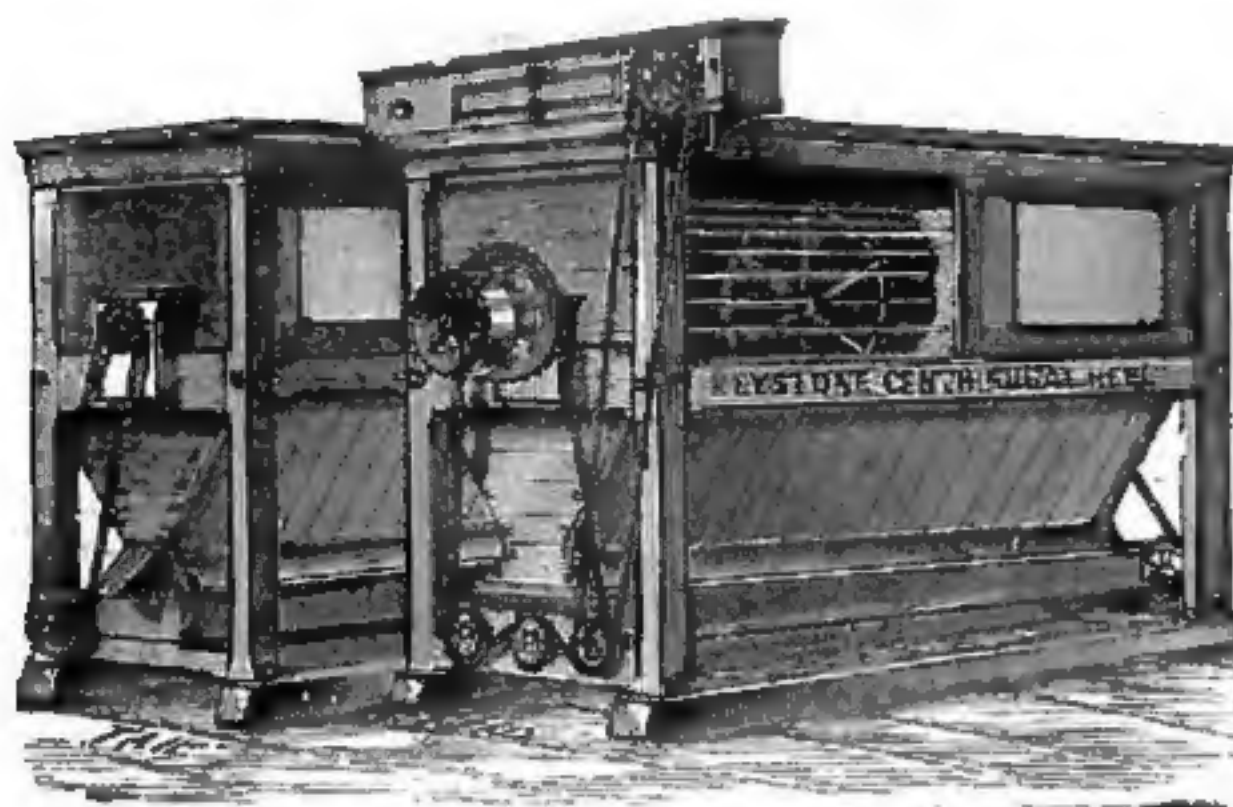
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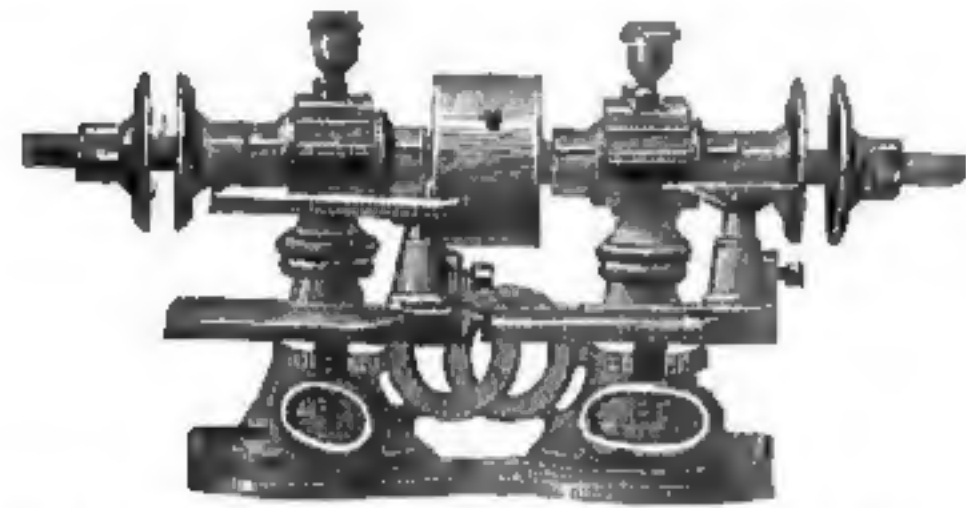
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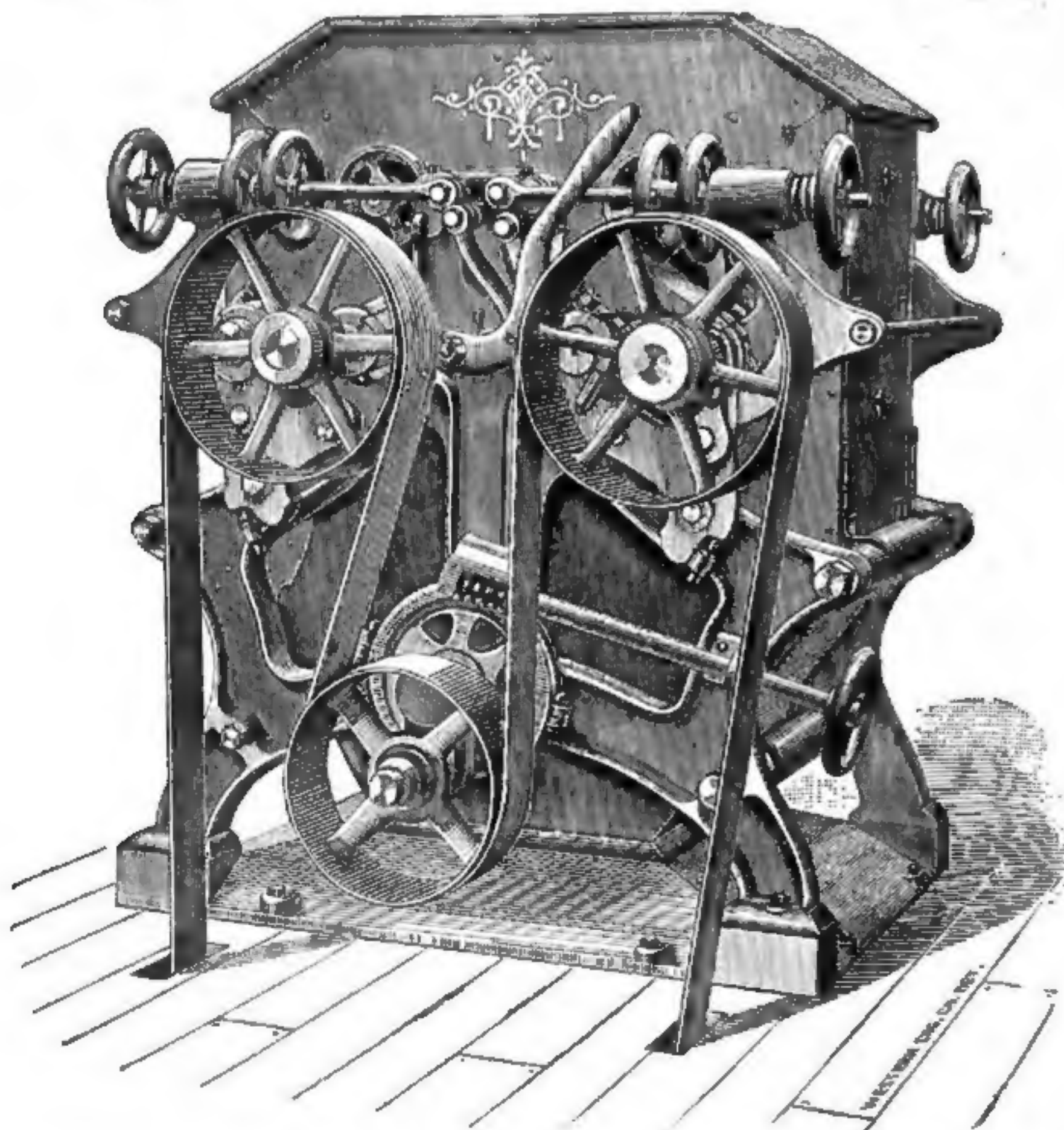
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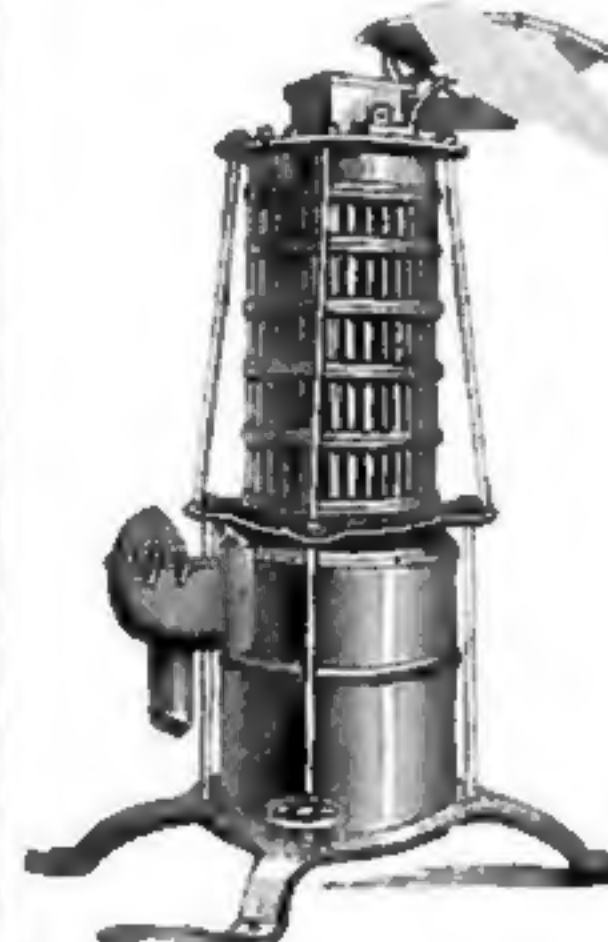
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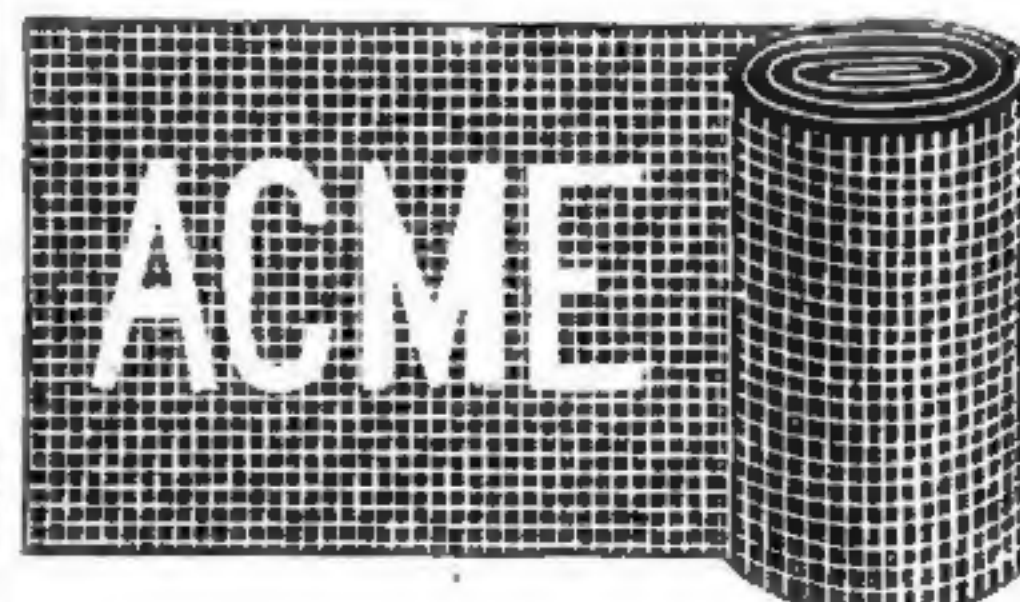
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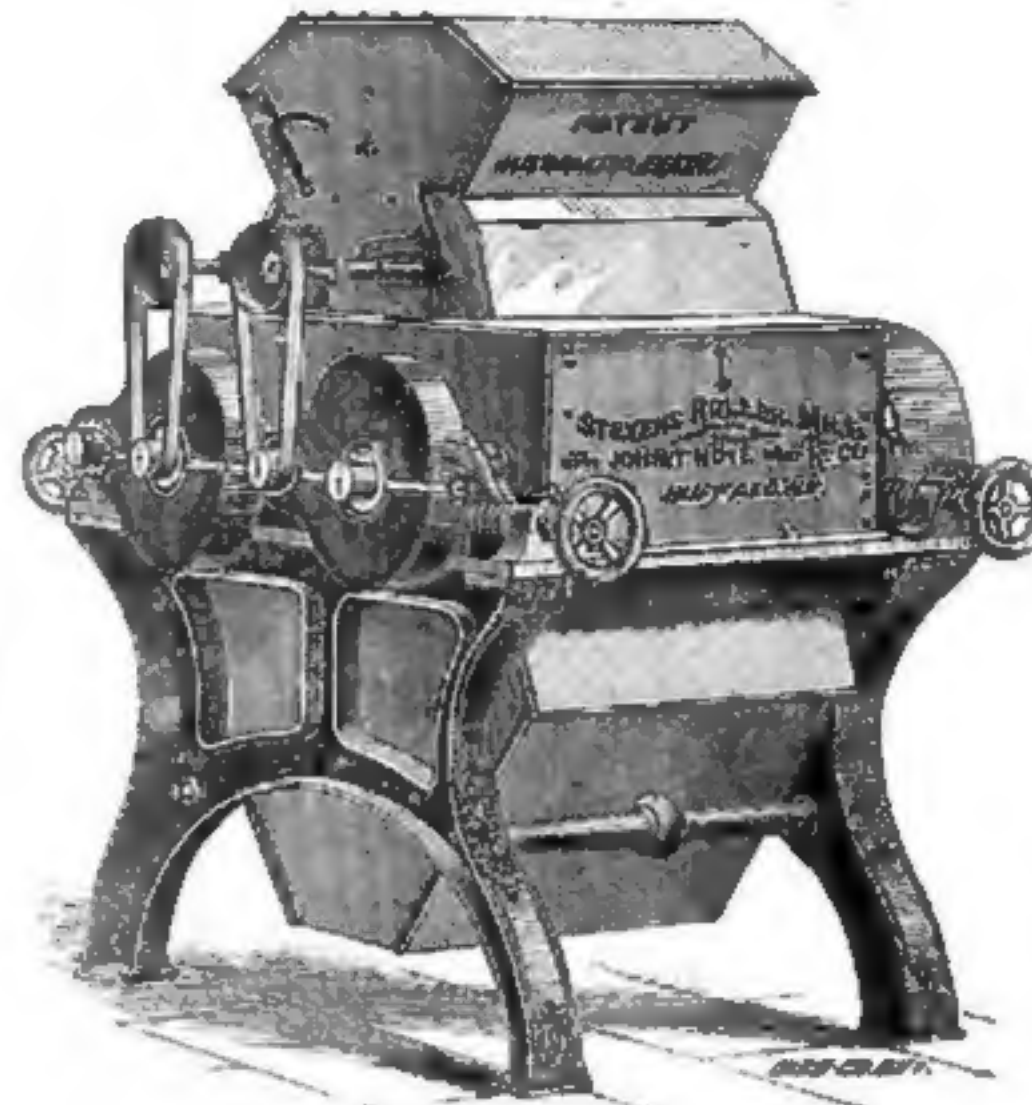
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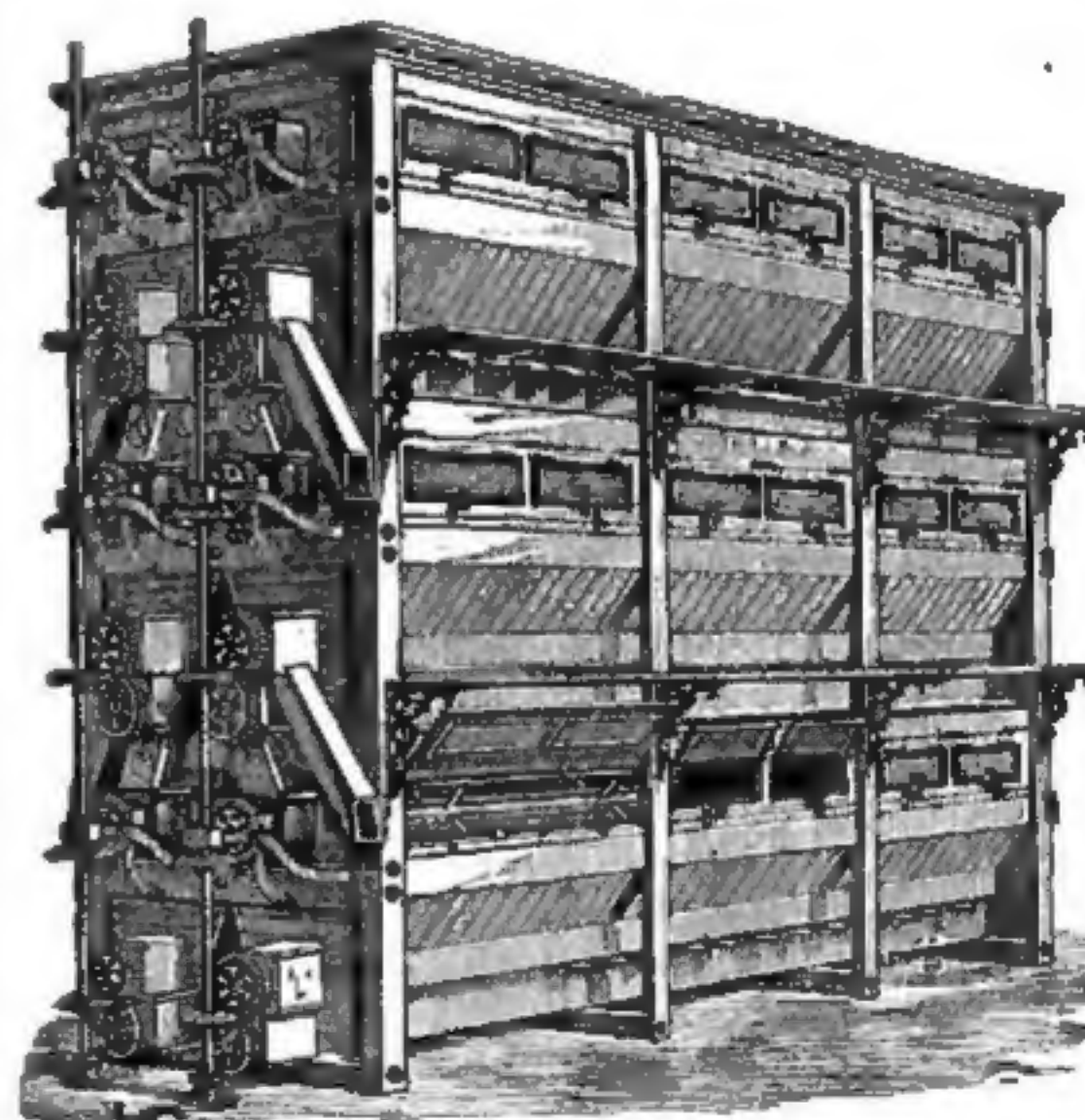
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